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The London School of Economics 1895—1945

IN October, 1945, the London School of Economics and Political Science completed its 50th year. It had been hoped that this event would be marked by the publication of a full history of the School, which would have made an interesting contribution to the history of the country during a period when many of the ideas derived from the group of men and women associated with the School helped to change the character of British society. But although some material had already been collected for this end, it has proved impossible during the war to go on with the plan, and the full history must wait for a more propitious moment. For the time being the following brief sketch, which uses merely the material readily available and is written at a time when many of the important documents are not yet brought back from their wartime depository, will have to serve as a substitute.

In the limited space available we shall have to concentrate on what may be called the purely academic activities of the School. Many aspects which a fuller account will have to consider, the conditions of life of staff and students, organisation, buildings, and many of the activities connected with, but not directly part of, the School can be only briefly touched upon or must be entirely neglected. If, even within the field of teaching and research, economics in the narrower sense receives, perhaps, relatively more attention than would be the case in a more comprehensive and balanced history, the Journal in which this brief account is to appear must serve as justification.

I

In the early nineties the unsatisfactory state of university education in London had begun to attract serious attention. As this coincided with a strong revival of interest in economic and social problems, it was inevitable that the glaring deficiencies in this field should be especially felt. Here not only London, but also the older universities were badly off compared with universities of the Continent and the United States. Oxford, Cambridge and Manchester had each, indeed, its Chair of Political Economy, but the subject was studied only as one among several others little connected with it; and though both of the old London colleges, University College and King's College, also had chairs in Political Economy (which had in recent times been held by such distinguished economists as J. E. Cairnes and W. S. Jevons, W. Cunningham and F. Y. Edgeworth) they were very much part-time in character and the courses were attended only by a

few arts students. As Sidney Webb wrote thirty-three years later of the position in 1894, "it is to-day amazing to think how minute was the provision for economic teaching, and how lacking that for economic research, in the London of the last decade of the century. King's College had a nominal professorship which was suspended.¹ Professor Foxwell held a chair at University College, but had only a score of students. A rather elementary course of lectures (which I had attended in my youth) was annually given at Birkbeck College.² This was all that existed in the capital of the British Empire for a population comparable to that of the whole of Scotland (or Belgium or Holland) each of them having several universities. Nor was there any dissatisfaction. The pundits solemnly declared that the existing provision met the entire demand; and, as they suggested, amply supplied the whole need. Only young men in a hurry could regard the idea of a single professor of political economy as being as obsolete as the idea of a single professor of natural history. It was revolutionary to imagine that there ought to be, at each centre, a dozen professors, each pursuing his own branch of a vast field of social study, up to heights and into details yet undreamt of."³

Sidney Webb was not the only one who was acutely dissatisfied. The "Commissioners appointed to consider the Draft Charter for the proposed Gresham University in London" reported early in 1894 (in the document which ultimately led to the reorganisation of the University of London as a teaching body) in favour of creating a separate "Board of Studies for Jurisprudence and Political Science" in the Faculty of Law and added that "in further elucidation of our aim in constituting this department of the Law Faculty, we need only refer to the programme of the lectures of the *Ecole Libre des Sciences Politiques* which has raised with great success the standard of political education in France. We are fully alive to the imperative and urgent need which exists for supplying this kind of education for the students of London University".⁴ They added emphasis to this by reprinting a recent programme of the *Ecole Libre* in the Appendix to the Evidence taken by them.⁵ At about the same time a Committee of the British Association prepared a full report "on the economic training in this and other countries"⁶ in the introduction to which they stressed that, "while fully recognising the great energy with which individual teachers in this country have sought to develop the study of this subject, your Committee cannot but regard the

¹ This is not quite correct. William Cunningham had in 1891 succeeded Edgeworth to the Tooke Professorship of Economic and Statistical Science and was in turn succeeded in 1897 by the Director of L.S.E., W. A. S. Hewins. But there is no reason to doubt that in fact little economics was then taught at King's.

² There was also a course at City of London College.

³ *St. Martin's Review*, Jan. 1929, p. 25.

⁴ C-7259, 1894, p. XLVI.

⁵ C. 7425, 1894.

⁶ The Committee consisted of W. Cunningham, E. C. K. Gonner, F. Y. Edgeworth, H. S. Foxwell, H. Higgs, L. L. Price and J. S. Nicholson.

condition of economic studies at the universities and colleges as unsatisfactory". They added that "as contrasted with Continental countries and also with the United States, the United Kingdom possesses no regular system. In one place Economics is taught in one way, and in connection with some one subject, not infrequently by the teacher of that subject; in another place in another way, and with another subject. Very often it is taught, or at any rate learnt, as little as possible. In most places this lack of organisation is due to the weariness of introducing elaborate schemes for the benefit of problematic students". But while this report was being discussed at the Oxford meeting of the British Association in August, 1894, it was to Sidney Webb that the opportunity for action came.

Sidney Webb was not only already well known as the leading figure in the Fabian Society, which five years earlier had attracted wide attention by the publication of *Fabian Essays*, but was also, as Chairman of the Technical Education Board of the London County Council, in an exceptionally favourable position when the opportunity for action on our problem arose quite unexpectedly. Some time in August, 1894, when G. B. Shaw and Graham Wallas were staying with Sidney and Beatrice Webb at Borough Farm near Milford (an occasion recorded for history in a drawing of the four reproduced as frontispiece to E. R. Pease's *History of the Fabian Society*), Webb received a solicitor's letter in which he was informed that under the will of Henry Hunt Hutchinson he had been appointed executor and one of five trustees instructed to spend the residue of the estate (amounting to nearly £10,000) within ten years. It was in the course of the discussion of these four at breakfast that it was decided to expend part of the money on the establishment of a school of economics.

Hutchinson, a former Clerk to the Derby Justices and an admirer of Herbert Spencer, had joined the Fabian Society in 1890 and had during the next few years given several hundred pounds to the society (at that time amounting to something like half its income) but had not become personally known to Webb. His daughter, Constance Hutchinson, with Webb one of the Trustees under her father's will, died fifteen months after him and by her will added another £1,000 or so to the funds at the disposal of her fellow trustees. Of the total sum thus left at the disposal of the Trustees nearly £5,000 went to cover the deficits of the School during the first three or four years of its existence. Another £1,000 was given by Webb on behalf of the Trust to the Library of the School to start the Hutchinson Collection of works on socialism. A further sum, set aside by Hutchinson for the publication, if thought fit, of some of his manuscripts, was ultimately (1898) devoted to endowing the Hutchinson Silver Medal by which his name is still commemorated.¹ The rest of the fund was expended on lectures and propaganda for the Fabian Society.

¹ For a time the lectureship held by Graham Wallas was also designated the "Hutchinson Trust Lectureship", because he was paid by the Trust instead of by the School.

Webb went to work at once, but it was some time before difficulties concerning the will were straightened out with the assistance of Mr. R. B. (later Lord) Haldane, a constant friend and adviser on this and other legal matters connected with the School. Most of the initial work of organisation and all the negotiation with the bodies whose collaboration was needed fell, however, to the Webbs. There does not at first seem to have existed even a committee, and Webb's fellow-trustees under the Hutchinson will took scarcely any part. Some financial support, though for the first year only a small sum (£500), was secured from the Technical Education Board of the L.C.C., and the London Chamber of Commerce put at the disposal of the School rooms in the City for the teaching of some of the commercial subjects.

The main problem, however, was the choice of the man to direct the new institution. Graham Wallas, who had at first been thought of, declined (as he did again eight years later) because of his election to the London School Board. Webb's choice fell in the end on a young man whose acquaintance he had made shortly before at Oxford—W. A. S. Hewins. Hewins, then only just thirty years of age, had originally taken a mathematics degree at Pembroke College, Oxford, had studied history under Charles Firth and had, already in 1892, published his *English Trade and Finance, chiefly in the Seventeenth Century*.

The choice was significant. Hewins was far from being a socialist or Fabian. But he was, like them, in revolt against "orthodox" economics, was greatly influenced by the German historical school, and was a strong Imperialist and a convert to Protection. He was one of a body for whom his German friends had first coined the now familiar name of "Neo-Mercantilist". He had lectured on economics of a descriptive and historical kind for the University Extension Movement and in 1891 had been an unsuccessful candidate for the Tooke Chair at King's College, London. On that occasion he "drew up for the council of the college an elaborate scheme for organising economic teaching at King's College and making that College the centre of economic training in London. This scheme was the foundation of the plan I afterwards drew up for the London School of Economics".¹

Hewins was offered and accepted the Directorship late in March, 1895, and during the next two months the work of organisation proceeded so rapidly that in May it was possible to announce the opening of the School for October and to issue a provisional prospectus. It is from this prospectus that we must derive almost all our information

¹ W. A. S. Hewins, *The Apologia of an Imperialist*, 1929, vol. 1, p. 23 Cp. also *ibid* p. 2-3. "The significance of the foundation of the London School of Economics was that that institution was deliberately intended to represent important aspects of economic science and practical investigation whether they were in agreement or not with orthodox economics. It has also to be remembered that every department of the civil service and all important administrative posts were in the hands of people trained in the older economics. The net result was that new views of policy had to make their way against established political and economic vested interests."

about the composition of the staff and about the lectures delivered in the first year of the School.¹

In planning the curriculum and selecting the staff, Webb and Hewins aimed at a varied group of specialists who would have an approach to the pressing problems of the day quite different from that of the professors of the older universities, whose point of view seemed to them narrow, abstract and individualistic. If Webb and Hewins were guided by any one conviction it was mainly that the theoretical and individualist economics of Ricardo and Mill had kept their dominant position far too long and that it was time to give other schools a chance. They therefore drew largely on all the different opposition movements, however much these might differ among themselves. Politics entered no more than through Webb's conviction that a careful study of the facts ought to lead most sensible people to socialism; but he took great care to select the staff from all shades of political opinion, more anxious to bring promising men under the influence of the new institution than to have it dominated by any one kind of outlook. Although there may have been some justification for Alfred Marshall's reputed comment that the lecture list was determined more by the sort of people who were available than by educational considerations, it was hardly more so than was inevitable in an experimental new institution; and the best answer to Marshall's criticism is, perhaps, that the School was from the beginning designed to provide, not a general course for young beginners, but an introduction to independent research work for maturer people with some knowledge of the world.

The first prospectus gives the names of eleven lecturers, all of whom, with the exception only of Hewins, had other main occupations. They were mostly relatively young men at the beginning of their careers, and half of them remained with the School for thirty years or more and became some of its most distinguished professors. The three oldest men among them (all aged 46) were the two professors at King's College and University College, the Rev. W. Cunningham and H. S. Foxwell, and a former Professor of Law and Cobden Lecturer in Economics at Owen's College, Manchester, J. E. C. Munro. Of these, only Foxwell remained long at the School. Munro, who lectured on Commercial Law, died at the end of the first session, and Cunningham left at about the same time. Slightly younger, but already a man with a fully established reputation, was W. M. (later Sir William) Acworth. Acworth, who (as Webb later explained) was chosen, with Cunningham, "to counteract Marshall", was already well known as an expert on railways and was called in for one of the professional studies on which Webb set great store. The Department of Railway Economics, of which Acworth was in charge for about a dozen years, remained an

¹ The prospectus explains "that it is not proposed to prepare students especially for any examination, but the lectures and classes already arranged will be found useful to candidates for the following public examinations among others, viz., Civil Service (Class I and Indian), Council of Legal Education, Institute of Bankers, Institute of Actuaries, London University (Mental and Moral Science), London Chamber of Commerce (Commercial Education)."

ideal to be imitated in other fields, though in some of them it was achieved only gradually and after a long time.

Of the other appointments only one must have seemed obvious from the beginning, that for political science of Webb's friend and associate Graham Wallas. Wallas had been one of the early members of the Fabian Society, one of the authors of the famous *Fabian Essays* of 1889, and one of those who had helped to plan the new school from the beginning. And though in the very year of the creation of the School increasing differences led to his resignation from the executive of the Fabian Society (as a few years later it led to his resignation from the Society itself), this did not affect his friendship for the Webbs. He was obviously the person best qualified to develop political science, a subject which both men had so much at heart that they joined it with economics in the name of the School.

For the other main subjects Webb and Hewins had to turn to younger and comparatively unknown men. For geography they found a forceful personality in the Reader in Geography at Oxford, H. J. (later the Rt. Hon. Sir Halford) Mackinder, who eight years later was to succeed Hewins as Director of the School and remained with it as Professor of Geography till 1925. Perhaps even more decisive for the future development of L.S.E. was another Oxonian, like Mackinder 34 years of age, but not yet established in academic life, Edwin Cannan. Though much closer to "orthodox" economics than any of his colleagues and a convinced individualist, he was in some respects an iconoclast and, with all his interest in economic theory, a severe critic of some of the classical positions. Strongly imbued with the historical spirit, Cannan maintained a lively interest in the significance of different institutional arrangements. A paper which he had read six years before to the Fabian Society on "The Bearing of Recent Economics on Individualism, Collectivism and Communism"¹ was characteristic, and though the programme for the first session lists only some lectures of his on local rates, soon to appear as the first volume of the School's series of publications,² he almost at once began to share with the Director, and gradually took over, most of the teaching in economics. Though through all the thirty-one years of his teaching at the School Cannan remained on a part-time basis (with Oxford as his home), he created the tradition which, more than anything else, determined the intellectual climate in the central department of the School.

For statistics, a subject which was then not taught as a separate discipline at any British university³ and for which Webb wanted

¹ Reprinted in E. Cannan's *Economic Outlook* (1912) pp. 53-86. The paper begins with the characteristic sentence: "The historical spirit has made so much way in recent years that no one now expects any particular organisation of industry and society to be described as the best for all times and places".

² E. Cannan, *The History of Local Rates in England* appeared in 1896 as No. 1 of the *Studies in Economics and Political Science* of which 109 volumes appeared till 1932, when this "Old Series" was replaced by several new series covering the different fields of the School's interests.

³ Only a few of the "Tooke Professors of Economic Science and Statistics" at King's College, London, appear to have given occasional lectures on Statistics in the course of their five years' tenures of the post.

"not statistical theory, but statistics for junior civil servants", Hewins turned, probably on Marshall's advice, to Arthur L. Bowley, a young mathematics master at St. John's School, Leatherhead, who three years before had won in Cambridge the Cobden Prize with a *Short Account of England's Foreign Trade in the Nineteenth Century*, and had recently read a first paper to the Royal Statistical Society. "Having accepted the post", Professor Bowley told a students' audience at L.S.E. a few months ago,¹ "I set to work to find out what statistics meant as a branch of economics or of mathematics, and studied the foreign works on the subject under Edgeworth's advice, and official statistics as developed by Giffen. Thus fortified I read a paper to the British Association at Ipswich, meeting Palgrave, Edgeworth, Cannan, Gonner and others, and in October started a statistical course which continued on Wednesday evening at 5.45 or 6.0 for perhaps thirty-eight years with little intermission".

Only two more lecturers appear by name in the first programme, neither of whom remained for long. The Hon. George Peel, now one of the Governors of the School, is mentioned as lecturing on "The Bank of France" and E. J. (later Sir Edgar) Harper, then Assistant Valuer to the L.C.C., on "The Rating Question". The names given, however, are only of those who were to deliver courses of "Public Lectures" arranged beforehand, mostly on special topics, while most of the instruction appears to have taken the form of "classes" on economics (Hewins and Cunningham), statistics (Bowley), commercial geography (Mackinder), commercial history (Hewins), commercial and industrial law (Munro) and political science (Wallas). There were clearly, it seems, other lectures (not listed in the programme), by Sidney Webb, G. B. Shaw, and probably others. But the only ones of which we have a full record were given by a young fellow of Trinity College, Cambridge, the Hon. Bertrand Russell, who delivered in February and March, 1896, six lectures on *German Social Democracy*², and who, three years later, still appears on the list of occasional lecturers with "Political and Economic Theory" as his subject.

After Webb had declined an offer of accommodation at University College, the School took as its first quarters two or three rooms at No. 9 John Street, Adelphi. Most of the lectures were, however, given either in the lecture hall of the Society of Arts near by or at the rooms of the London Chamber of Commerce, Botolph House, Eastcheap. There was as yet no Library and scarcely any other facility or administrative machinery. Indeed, at first the Director was assisted solely by one person, Harry (later Lord) Snell, who moreover was

¹ From the typescript of an address delivered by Professor Bowley to the L.S.E. Students' Union in Cambridge on April 18th, 1945.

² Published in the same year as No. 3 of the *Studies in Economic and Political Science*. Bertrand Russell also provided the funds for some of the first research studentships offered by the School.

supposed to be a student as well as secretary, but soon found the latter job more than a single person could handle.¹

The student audiences during this first year were later described by Graham Wallas as "mainly of the type to which I had become accustomed in the University Extension movement—a few ambitious young civil servants and teachers, and a few women of leisure interested in the subject or engaged in public work. But the desire for a serious study of the social sciences began to form itself among people who would not have gone to 'extension lectures', and it was, I think, at my first course of lectures that I used to be frightened by finding Mr. (afterwards Sir Robert) Morant of the Education Office, and Mr. (afterwards Sir Charles) Stewart (the Clerk to the L.C.C. and later Public Trustee) in fairly regular attendance".² One of the early students recalls that "the first students of all consisted of five women, coming in the train of Professor Graham Wallas from University Extensions, and four men, of whom one, the present Lord Snell, acted as secretary to the Director, while another, Dr. Max Beer, surviving the argumentative assaults on his Marxist philosophy made by the whole teaching staff of the school, became well known later as the author of *A History of British Socialism* and as a writer on social and political issues in Germany. Two of the other students were also German; one, Dr. Helene Simon, wrote a well-praised book on Robert Owen".

II

The new venture proved at once a considerable success. "During the first year more than 300 students joined the School. Of these, 100 undertook the whole or part of the three years' course of study established at the School, or were engaged in other systematic work."³ It was clearly possible to plan for the second year on a more ambitious scale. A larger staff, better accommodation and a proper Library were the first necessities. The number of lecturers was more than doubled. Of those who were for many years to remain pillars of strength to the School, L. T. Hobhouse and G. Lowes Dickinson joined at the beginning of the second year. C. A. Montague (later Sir Montague) Barlow as Lecturer in Commercial Law, E. A. Whittuck as Lecturer in International and Constitutional Law, and C. P. Sanger as Lecturer in Statistics, came at the same time and remained with the School for several years. Apparently Hubert Hall's classes in Paleography and Diplomatic, which for over twenty

¹ Lord Snell, *Men, Movements and Myself*, 1936, p. 122: "I was at the beginning the only person on the administrative staff, and the needs of the enterprise required that I should be in attendance from nine o'clock in the morning, and remain there until after the school closed at ten o'clock in the evening. The secretarial work involved in the foundation of a new institution was unexpectedly heavy. Lists of names had to be compiled, thousands of envelopes addressed, students' fees collected, tickets issued, and the many needs of students and lecturers had to be met."

² "A Historical Note" in *The Handbook of the Students' Union* (L.S.E.), October, 1925, p. 11, and L.S.E., prospectus for 1896-7.

³ Quoted from the prospectus of the School for the years 1896-1897.

years remained a distinct feature of the School and which at one time it was hoped might become the nucleus of a British *Ecole des Chartes*, also started during this year but are mentioned in the prospectus only a year later. Among those who came for only short periods are such well-known men as F. Y. Edgeworth (lecturing on life tables), A. V. Dicey, C. H. (later Sir Charles) Firth, E. C. K. (later Sir Edward) Gonner and J. A. Hobson.

The problem of accommodation was solved by a move to the attractive and afterwards famous house at 10 Adelphi Terrace, at the corner of Robert Street, overlooking the river. This house remained the home of the School for the next six years. It was much too large and (at £350 p.a.) much too expensive for the School, and the move was made possible by an arrangement by which Miss Charlotte Payne-Townshend (soon to be Mrs. G. B. Shaw) took the second and third floors of the house. In consequence, during the whole of the period at Adelphi Terrace, Mr. and Mrs. Shaw were in continuous contact with the life of the School and took a regular, if informal, part in most of its activities.

The need most acutely felt had, however, been for a Research Library, and already in February, 1896, an appeal had been issued for funds "To provide, for the serious student of administrative or constitutional problems, what has hitherto been lacking in this country, namely a collection of the materials for economic and political research" and thus to remove "the almost insuperable hindrance which the absence of such a library has hitherto put in the way of English students". The full text of the appeal,¹ which eloquently expresses all the difficulties which the Webbs themselves had encountered in their pioneer studies of problems of economic administration, makes it clear that to them the creation of the Library was quite as important as that of the School itself. The Library was to be set up as a distinct institution with its own name ("The British Library of Political Science") but under the same direction as the School.² As a result of the appeal a sum of more than £2,500 was raised and in November, 1896, the Library was opened in one of the rooms of 10 Adelphi Terrace. It became henceforth very much the centre of the School's activities, and though it took it several years to achieve even the modest size of 10,000 volumes, it was soon recognised as so unique in character that it began to attract many people engaged in research,

¹ Reprinted in the *Application* (of the London School of Economics and Political Science) to the *London University Commissioners*, 1899, and the shorter version printed in the same year as a *Brief Report on the Work of the School since 1895*: see p. 12.

² The reason was apparently that the Webbs "had discovered an obscure statute, passed in 1849 at the instance of the Prince Consort, under which Libraries might be exempted from the local rates which Colleges would have to pay. With ingenious frugality they established a library and allowed lectures to be given on its premises. The pious evasion was naturally discovered at last, as the School of Economics grew too large to lie hidden in the interstices of the British Library of Political Science." *Director's Report on the Work of the School 1924-25*. Since 1925 the name of the library has been "The British Library of Political and Economic Science"

and to many an outsider the School came to seem an adjunct to the Library rather than the other way round.

Among the students who joined the School in its second session were several who were to play a prominent part in its life. Miss Lilian Tomn (better known as Mrs. Knowles) came from Girton after a sensational double first in the History and Law Triposes, on one of the first research studentships, and soon began to deputise for the Director in the economic history classes. She ultimately joined the permanent staff in 1903, to serve as Lecturer, Reader and finally Professor till her early death in 1926. For more than twenty years her vivid and powerful personality made a profound impression on succeeding generations of students, and apart from Cannan there has probably been no teacher whose influence on the intellectual atmosphere of the School has been deeper or more lasting. A. J. Sargent came from Oxford as one of the few full-time research students who paid their own way, working on his monograph on *The Economic Policy of Colbert*, which appeared in the School series in 1899, when the author had already been for some time a Lecturer in Economic History here. He rejoined the School after an interval in 1902, and remained, first as Lecturer in Geography and International Trade and later as Reader and Professor in Commerce, until his retirement in 1936. F. W. Hirst, elected to the first Russell Studentship in 1896, was for the next three years a Lecturer on Municipal and Local Government and came back for a time during the first German war. Of the winners of research studentships in 1898, P. W. L. (afterwards Sir Percy) Ashley became in 1899 a Lecturer in History and Public Administration, to continue for about ten years, while George Unwin came back a few years later to give some occasional lectures.

In that second year a solution was found to the problem of providing the School with administrative machinery. Miss C. S. Mactaggart and John McKillop, who had known each other in Australia, came together to the School and soon found themselves running the administration of School and Library. McKillop, who had returned from a Malayan tin mine short of one arm, was originally appointed as the Director's secretary to succeed Snell, but soon assumed the functions of Librarian; while Miss Mactaggart, first brought in as a temporary substitute for a lady superintendent, rapidly became in effect the Secretary of the School, though formal recognition had to wait until, after some years of struggle, McKillop definitely withdrew to the post of Librarian; this he held till 1909, when he was succeeded by B. M. Headicar. Miss Mactaggart remained Secretary for more than twenty years, and as the first Directors could often give only part of their time to the School, she was throughout that period not only effectively in charge of all current administration, but also the social centre which provided contact between members of the staff and between staff and students. The staff teas, at which she regularly presided from an early date, were soon joined by an

increasing number of the students. These teas constituted for a long time almost the only occasions when the members of the teaching staff met, and from them there gradually developed the Refectory.

The same year also saw an appointment almost equal in importance for the future of the School to that of Miss Mactaggart. Edward John Dodson, late of the Royal Navy, came to the Porters' Lodge. As Head Porter he was for many generations of students their most intimate point of contact with the School and one of the happiest memories of their life there. As the *Clare Market Review* said in its tribute to him on the occasion of his retirement in 1923, "Nobody who has had any lengthy experience of the School will deny that Dodson has had his share in assisting to assure its success".

The end of the first session saw also the formation of the Students' Union—"The Economic Students' Union" as it was called till 1900—from the beginning a very lively body, devoted at first mainly to the discussion of economic subjects introduced by outside speakers. One of its first Chairmen, W. Rees Jeffreys, recalls that if the debates showed signs of flagging he "would sometimes send a chit to Bernard Shaw, who then occupied a flat at the top of 10 Adelphi Terrace, and ask him if he could put in an appearance. He frequently responded to these invitations and his remarks would give fresh life and vigour to the discussion. G.B.S. could always be depended upon to put vividly some novel point of view". Professor Sargent also recalls one of these early debates, at which Sir John Gorst had spoken about education and was being handled rather roughly in the discussion, "when a strange figure rose from the middle of the audience and proceeded to deal with the speakers and their ideas in a fashion not so well known then as later. The speaker was Bernard Shaw, and his aspect was rendered more formidable by scars and plasters spread over his face. It seemed that he had suffered a spill from his bicycle on a somewhat rough and unyielding surface. I can still see the startled expression in the face of our visitor, as he learnt still more of our methods of free expression".

The second year of the School seems also to have seen the first of the receptions given by the Webbs, either in the rooms of the School or in Miss Payne-Townshend's flat above it, where from time to time even larger crowds assembled than at the more regular meetings at the home of the Webbs. The first of these receptions, given in February, 1897, "to all the principal educationalists of London" included a very distinguished group and it seems that in particular the appearance of Cardinal Vaughan in his red robe caused something of a sensation.

It was through these informal meetings more than in any other manner that the influence of the Webbs, as has been described by one contemporary, "permeated the School in its beginnings". Mrs. Webb (who in October, 1896, had been appointed "Lady Visitor" to the School and who also gave occasional lectures on Public Administration)

participated in this hardly less than her husband, who as Chairman of the "Administrative Committee" was formal head of the School.¹

III

The remaining six years of the first Directorship of the School were dominated by the changes arising out of the reform of the University of London and the admission of L.S.E. as one of its "Schools": the creation of the B.Sc. (Econ.) degree, the incorporation of the School as a company, and the move to its present site in Clare Market, or, as it is now better known from its new entrance, Houghton Street.

The London University Act (1898) had brought about a complete transformation of the University from a mere examining organisation to a teaching body; it entrusted a body of Commissioners with the admission of existing colleges as "Schools of the University" and the recognition of their teachers as teachers of the University. The application submitted by the Director of L.S.E. on behalf of the Committee, dated March 6th, 1899, contains a *Brief Report on the Work of the School since 1895* which is the fullest account that we possess of its organisation in its early years. While it is a record of a remarkable achievement, and could justly claim that the School had already established such an international reputation that it was being imitated in other countries, the chief impression to-day is how very modest an establishment it still was. Nothing illustrates this better than the paragraph in the *Brief Report* on "The Financial Position of the School," which may be reproduced in full:

"The total cost of the School from April, 1895, up to the present time, including the preliminary organisation which was necessary, and installation expenses, has been about £9,000. The annual expenditure of the School, under present arrangements, may be estimated as follows:

Director and Lecturers	£1,400
Rent, rates and taxes.	430
Salaries of Staff	530
Publications	50
Printing and Stationery.	150
Research Studentships	350
Housekeeping expenses	120
Postage and Telegrams	80
Miscellaneous	20

£3,130

¹ The other members of the Administrative Committee were Mrs. Webb, Miss Payne-Townshend, Dr. William Garnett, William Clarke, E. R. Pease, Sydney Olivier, and Hubert Bland.

To meet this expenditure the School has no endowment, but the following sources of income :—

Donations and Subscriptions.	£730
Grant from the Technical Education Board of the London County Council	1,200
Agreed share of rent and expenses paid by the British Library of Political Science	400
Fees of Students.....	300
Subletting.	170
	£2,800

thus leaving a balance of £330 to be raised by further subscriptions and donations. Funds have hitherto been found to meet all expenses incurred, and the School at present has no debts."

The School was duly admitted to the University and from the session 1900-01 onwards styled itself, as it does to-day, "The London School of Economics and Political Science (University of London)". Its fourteen regular lecturers became teachers of the University, though the only "professors" of whom it could yet boast were Foxwell and Hewins, who held the existing professorships at University College and King's College, respectively.

In its new position it became necessary that the somewhat loose and indefinite organisation of the School should be regularised. Till then it had been a purely private body and the "Administrative Committee" which nominally looked after its finance was little more than another name for Sidney Webb. In 1901 it was decided to seek incorporation as "a company limited by guarantee and without power of taking profits". It thus became, in June, 1901, "The Incorporated London School of Economics and Political Science", still its full, though rarely used, official name, with a Board of Governors of which the Bishop of London (Mandell Creighton) became the first President and Sidney Webb the Chairman.

With the admission of L.S.E. as a School of the University a "Faculty of Economics and Political Science" had been created whose membership coincided almost entirely with the teaching staff of the School. The new degree of B.Sc. (Econ.), which was first instituted in 1901 and for which the first Final examinations were held in 1904, appears to have been so exclusively the work of the inner L.S.E. group that it took even Professor Foxwell at University College (though also on the staff of the School) completely by surprise and led to some lively discussion in the "Economic Club". This in the end produced some minor modifications in the "Pass" section of the new degree, in which alone University College was interested, while the teaching for the "Honours" degree became in fact the exclusive prerogative

of L.S.E.¹ It seems to have been the first university degree in the country devoted mainly to the social sciences, ante-dating the Cambridge Economic Tripos by two years. For the Honours degree, which in this form remained in force till 1923, the Final examination consisted of three compulsory papers on Economics, History, and Public Administration and Finance, two Essay Papers, and four papers on one of ten special subjects ranging from various aspects of Economics and Economic History to Statistics, the History of Political Ideas, and Public Administration.

For the urgently required new building a site had been provided, "on permanent loan", by the L.C.C. from the land acquired on both sides of the proposed new Kingsway—some 4,000 square feet in Clare Market, valued at nearly £15,000. The funds were supplied mainly by a former newspaper proprietor and collaborator of Cobden and Bright, Mr. John Passmore Edwards, who was giving away large amounts for libraries and similar institutions all over the country, and who, impressed with the need of the School for a research library, was generous enough to provide over £10,000. An appeal for further funds, opened in 1901 by a meeting at the Mansion House under the presidency of the Lord Mayor, at which Lord Rosebery, the second President of the Governors of the School, gave an address on the need for Higher Commercial Education, brought another £10,000, of which £5,000 was contributed by Messrs. N. M. Rothschild. The new building in Clare Market, known as the "Passmore Edwards Hall", was formally opened in May, 1902, and became the nucleus from which the School spread gradually towards and beyond Houghton Street.²

The programme for the first full session of L.S.E. in its new home shows several important new developments. Accountancy and International Law were added to the subjects taught and two complete professional courses in "Library Administration" and "Insurance" took their place side by side with the "Railway" course conducted since the opening of the School.³ Of these two new courses the one

¹ See in this connection Miss C. E. Collet's article on Professor Foxwell in the *Economic Journal*, December, 1936, pp. 615-619.

² Of this first building of the School only the main lecture hall still stands, now called the Passmore Edwards Room, and used as the History reading room of the Library. The rest of the old building disappeared when the new Library wing was constructed. It is presumably to the old building that a story refers which is told in P. Maitet's *A. R. Orage: a Memoir*, 1935 (page 35) although it seems no less applicable to some of the later erections: "Penty, for example, first determined to oppose Fabianism when he discovered the way in which Pease and a colleague had judged the winning design in the architectural competition for building the London School of Economics. Of all the designs submitted they had simply measured up the floor space, and awarded the prize to the architect whose classrooms added up to the highest total or superficial square feet! They called this a decision by the statistical method."

³ The fourteen sections under which the 70 lecture courses were listed in the *Calendar* for 1902/3 are: Economics, Mathematics and Statistics, Economic and Political Geography, Economic and Political History, Law, Public Administration, Public Finance, Accountancy and Business Methods, Banking and Currency, Foreign Trade, Transport, Insurance, Demography and Bibliography and Library Administration.

in Library Administration continued at L.S.E. till 1923, when it was handed over to University College, while the Insurance course was discontinued in 1907, when the insurance companies transferred their support to a newly founded Insurance Institute (according to Webb, because "they thought actuarial knowledge was being made too cheap").

The quiet development which had thus begun was interrupted soon after the beginning of the next session by the sudden resignation of the first Director. In May, 1903, Joseph Chamberlain had opened his great tariff campaign and Hewins, now a convinced Protectionist, had at once thrown all his energies into its support. In November Chamberlain offered him the post of secretary to the "Tariff Commission" created to provide a scientific basis for Chamberlain's schemes, and Hewins at once accepted, at the same time sending his resignation to Webb.

IV

Halford J. Mackinder, who succeeded Hewins, had been with the School from the beginning. Recently he had combined with his two teaching posts in geography at the School and in Oxford the Principalship of University College, Reading. The five years during which he remained Director of the School were years of steady though unspectacular development, and he is remembered as probably the ablest of its early Directors, capable, as Webb described it, of running the School with his little finger. He left its financial position greatly consolidated.

Probably the main academic innovation of the period of his Directorship is the first appearance in 1904-5 of lectures in sociology, chiefly as a result of a benefaction by Martin White. The first "Martin White University Lectures" were given in that year by Professor Westermarck on General Sociology, by Dr. A. C. Haddon on Ethnology, by L. T. Hobhouse on Comparative Ethics and by Lafcadio Hearn on Japanese Civilisation. In the following session there appears also under the heading of Sociology the course on "Logic and Scientific Method" by Dr. A. Wolf, already Assistant Professor of Philosophy at University College, which was to remain a familiar feature for thirty-six years.

Another important innovation of the period was the introduction in 1906-7 of the Army Course¹ "for the training of officers for the higher appointments on the Administrative Staff of the Army, and for the charge of Departmental Services", as a result of the Army reforms of that old friend of the School, Lord Haldane, now Secretary of State for War. The course, though interrupted by the first war, was resumed in 1924 and continued till 1932, when it was suppressed as a result of the economy campaign.

¹ Also known as "Haldane's Mackindergarten", with its members, as Pember Reeves said, "Seeking the bubble reputation
"Even in the Cannan's mouth".

Among the new arrivals on the teaching staff during this period was R. A. (now Lord) Wright, who was Lecturer in Commercial and Industrial Law from 1903 to 1907 and Whittuck Lecturer in Law from 1907 to 1916. Another was L. R. Dicksee, who came in 1904 from Birmingham to teach Accounting and remained with the School as Lecturer and later Reader and Professor till 1926. In 1906 H. B. Lees-Smith came from Ruskin College, Oxford, to lecture on Public Administration, and in the same year W. T. Stephenson arrived from the North-Eastern Railway to take over Acworth's Railway course; both continued with the School for well over a generation.

The number of students, which after the admission of the School to the University had suddenly doubled to over 1,000 (counting everybody attending any lectures), continued to grow steadily and during the session 1906-7 reached 1,637. The Students' Union came to take an increasing part in the life of the School. In 1905 the students issued the first number of the *Clare Market Review*, which soon gained a reputation rare for a students' journal, and in 1907 the first of those Students' Parliaments was held which became, with the help of guidance on parliamentary procedure from H. B. Lees-Smith, a characteristic standing feature of the L.S.E. Union activities.

In 1908 the School lost its second Director, as it had lost its first, to politics. Sir Halford Mackinder resigned as Director on becoming a (Liberal Unionist) candidate at a bye-election, but remained with the School as one of its most brilliant lecturers and later as Professor of Geography till his retirement in 1925.

V

Sidney Webb, who as Chairman of the Governors was still the driving spirit of the School, looking for a new Director, found him again among that circle of Imperialists which Beatrice Webb had brought together in 1902 as a dining club known as the "Co-efficients" and which, in addition to men like Haldane, Grey, Webb, Amery and Wells, had included both the first two Directors. But, as E. R. Pease recollects, "the first two Directors were both Protectionists, and the controversy between Free and Fair Trade was acute at the period. When Mackinder resigned, Webb said we really must appoint a Free-trader: otherwise the City will think we are Fair-traders in disguise. Ashley of Birmingham would have had the offer, but he too was a Fair-trader, and no economist thus and otherwise suitable was available". So Webb's choice fell on the Hon. William Pember Reeves, who in the years 1891-96 had been Minister of Education, Labour and Justice in the socialist Government of New Zealand and had since served the Dominion in London, first as Agent-General and later as High Commissioner. As a representative of New Zealand he had already become a Senator of the University of London; he had also written several books on social problems. He accepted the post on a part-time basis with the understanding that he would remain

a Director of the National Bank of New Zealand. In consequence, from 1908 to 1919, as Professor Bowley put it, "Pember Reeves reigned, while Miss Mactaggart ruled".

The institution over which Pember Reeves came to preside had in some ways already the aspects of a small university and in the years of further growth up to 1914 the variety of subjects taught continually increased. In 1909-10, in addition to an elaborate course on "Indian Institutions" given in the Department of Sociology by a group of distinguished experts (including, when it was repeated in the following year, J. M. Keynes on Indian Finance) the innovations included such apparently extraneous subjects as Meteorology (under Geography) and English Literature (as part of the course on Librarianship). In 1911-12 there appears significantly an elaborate course on "State Insurance in England and Abroad" given by the Director, H. B. Lees-Smith, and four other special lecturers brought in for the purpose.

A major addition came in 1912-13 with the creation of the Department of Social Science and Administration. It was brought into existence by the incorporation in the School of the "School of Sociology and Social Economics", founded in 1903 by Sir Charles Loch, James Bonar, Bernard Bosanquet and others, for the special purpose of training social workers and administrators. E. J. Urwick, the head of that institution and then Tooke Professor of Economic Science and Statistics at King's College, London, took charge of the new Department, which from the beginning was supported by the Ratan Tata Foundation. Among its first lecturers was C. R. Attlee who, with an interruption of some years of war service, remained with it till 1923. In the second year R. H. Tawney appears for the first time as an occasional lecturer in the Department and Director of the new "Ratan Tata Foundation," created by a "gift of Sir Ratan Tata of Bombay and Twickenham to promote the study and further the knowledge of the principles and methods of preventing and relieving destitution and poverty". Although under the direct control of the University this research foundation was housed in, and largely run by the staff of, L.S.E. It will not be possible within the space here available to follow in detail the somewhat complicated joint history of the Social Science Department and the Ratan Tata Foundation. It must suffice to add that, after a further donation by Sir Ratan Tata, both came for a time under the direct control of the University, though continuing to be located at L.S.E., till in 1922 they were finally reintegrated in the School as a single Department.

The growing importance of the School found expression in the increasing number of university professorships tenable there. It had not been till 1907 that, with the appointment of Edwin Cannan to the new Chair of Political Economy, the first step in this direction had been made. In the following year a new benefaction by Martin White had made possible the creation of two (part-time) chairs in Sociology to which E. A. Westermarck and L. T. Hobhouse

were appointed. In 1912 A. J. Sargent became Professor of Commerce and the title of Professor of Public Administration was conferred on Sidney Webb, without salary, while in the following year C. G. Seligman, who two years before had succeeded A. C. Haddon as Lecturer in Ethnology, was made Professor of that subject. In 1914 Graham Wallas and L. R. Dicksee were promoted Professors of Political Science and of Accounting and Business Organisation, respectively, and in 1919 a Chair of Statistics was created for A. L. Bowley.

Quite as much as by the growth of its permanent staff the increasing fame of the School during these years is reflected in the distinguished occasional lecturers whom it attracted both from England and abroad. C. Bouglé, Elie Halévy, Paul Mantoux and François Simiand from France, and Richard T. Ely from U.S.A., joined the staff for shorter or longer periods, while the English occasional lecturers included Philip Wicksteed, Karl Pearson and many well-known historians such as H. A. L. Fisher, H. W. V. Temperley and J. Holland Rose.

The best proof of the vitality of the School in these years is, however, the group of distinguished names which appear year after year, first as holders of research studentships and soon as junior members of the staff and winners of the Hutchinson Medal. C. K. Hobson, who came from Cambridge in 1909 for his study on *The Export of Capital* but acted only for a short while as a lecturer, is one of the first of that continuous stream of new talent. In 1911 Hugh Dalton and Eileen Power from Cambridge were among the winners of research studentships; both joined the staff two years later. Bronislaw Malinowski, who had come to the School from Cracow in 1910, won a research studentship in 1914 and became a member of the staff in the same year. Of the School's own students T. E. (now Sir Theodore) Gregory had the year before won a research studentship and soon after an appointment on the teaching staff; and Hilda Rodwell Jones (better known as Dr. Ormsby) had about the same time been appointed as a lecturer, while her brother, later Professor L. Rodwell Jones, who had come with her to the School in 1908, joined the staff on his return from the war in 1919. Another research student of this period who, after taking his first degree externally, was working for his D.Sc. with Professor Bowley, was Josiah C. Stamp (later Lord Stamp), who in 1916 won the Hutchinson Medal for his *British Incomes and Property*.

The continuous expansion of the School was, then as later, causing incessant pressure on the available space, and already under Mackinder several additions to the original Passmore Edwards Hall had become necessary. In 1910 the congestion became so serious that some temporary buildings had to be erected on land granted to the School by the L.C.C. for three years on the understanding that during this time efforts would be made to raise funds for the erection of a permanent addition. Some of the plans then made were carried out in 1912, but the creation of the Social Science Department in that year brought

a need for still more accommodation, and another appeal for funds for the extension of the building was issued in 1914.

All these developments were cut short, however, by the outbreak of the first German war. The number both of students and of the staff diminished rapidly and by the session of 1917-18 was reduced once more to very small dimensions. But during the next session, when peace brought an unprecedented influx of students, Pember Reeves, who had recently assumed the Chairmanship of the National Bank of New Zealand and who was now ill and stricken by the loss of a son, found the task too much for him and resigned. In 1911 Sidney Webb had handed over the Chairmanship of the Board of Governors to the Rt. Hon. Russell Rea, after whose death in 1915 the office had passed to Arthur (later the Rt. Hon. Sir Arthur) Steel-Maitland, M.P. Webb was therefore free himself to act as Director. It was not long, however, before he relinquished the post to a man with whose appointment began a long new period of very rapid expansion.

VI

Sir William Beveridge, the new Director who took over at the beginning of the session 1919-20, came from the Civil Service. He had himself been an "occasional" student of L.S.E. in 1903-1905, when, on leaving Oxford, he held his first post as sub-warden of Toynbee Hall. After a period as leader writer on the *Morning Post* he had been brought into the Civil Service by Lloyd George and Winston Churchill to organise the Employment Exchanges. The reputation there gained for great organising capacity had been enhanced during the war by his work, first in the Ministry of Munitions and then as permanent Secretary of the Ministry of Food. At the School he was soon joined by Mrs. J. Mair (now Lady Beveridge), who had worked with him at the Ministry of Munitions and the Ministry of Food, and who succeeded Miss Mactaggart as Secretary. Miss Mactaggart, who was in poor health, was appointed Dean of the School, a position which she held until her retirement a year later.

The era of development of the School which opened with these appointments became one of such rapid change and expansion that it will not be possible to describe it here in the same detail as has been given to its first twenty-four years. Most of these events are, however, still in recent memory and a brief outline will suffice to complete this sketch of the growth of the London School of Economics.

The enormous influx of students during the demobilisation period, with a much higher proportion of them than ever before entering for regular degree courses, brought about a fundamental change in the character of the School. The teaching staff which, it seems, had until then been composed entirely of lecturers engaged on a part-time basis, came increasingly to consist of teachers who gave the whole of their time. The provision of double sets of lectures and

classes, day and evening, became the general rule. Young men had to be brought into all the departments to help the older teachers who had been for so long in sole charge of their subjects. The regular teachers, it is true, even at the beginning of the session 1921-22, were still no more numerous than in 1913-14, but were now mostly on a full-time basis, and the next few years brought a rapid growth of numbers and great changes in personnel.

The core of the Faculty with which the School entered the nineteen-twenties was still composed largely of the same people who had been with it since its beginning a quarter of a century before. Bowley, Cannan, Foxwell, Hobhouse, Lilian Knowles, Mackinder, Sargent, Wallas, Webb and Westermarck, by 1923 all Professors, were still the mainstay of the teaching. They had been joined in more recent years by Dalton and Gregory, Lees-Smith, Stephenson, Tawney and Wolf, and by Mrs. Ormsby and Eileen Power. The first post-war years brought Major L. Rodwell Jones and Colonel F. R. M. de Paula, Morris Ginsberg, Harold Laski and C. M. Lloyd, most of them soon to take leading positions in the teaching work of the School.

With the first post-war decade came, however, the inevitable greater changes with the retirement or death of one after the other of the older generation. Foxwell, the first to retire in 1922, was followed next year by Graham Wallas. Mackinder retired in 1925, Cannan in 1926, Webb (from teaching only) in 1927 and Westermarck in 1930. Lilian Knowles died suddenly in 1926 and Hobhouse in 1929. Only Bowley and Sargent continued much longer and retired at the same time in 1936.

The first great addition to the teaching programme and the consequent increase of the teaching staff under the new Directorship was the result of preparations which had begun several years earlier: the creation of the degree of Bachelor of Commerce and the donations by Sir Ernest Cassel which made possible the required increase of staff on the commerce side. To develop the teaching of higher commercial subjects had, of course, been one of the main aims at the foundation of the School and plans for its realisation had been discussed again and again. They had never, however, materialised and, apart from such exceptions as transport, the economic, social and political subjects had developed much more rapidly than the more strictly commercial subjects. In the discussions immediately before and during the war this need had, however, come decidedly into the foreground and in 1917 an elaborate memorandum by the Director of the School on *The Development of Higher Commercial Education after the War and the Position of the London School of Economics* provided the basis for the new degree, which was instituted in 1919. Even before the war the School (in conjunction with King's College, which undertook the modern language teaching in the scheme) had begun to experiment with a two years' course leading to Certificates for Higher Commercial subjects. But greater progress was made only when Sidney Webb

succeeded in interesting in the plan on the one hand Sydney Russell-Wells (later Sir Sydney Russell-Wells, from 1920-22 Vice-Chancellor of the University of London and later its M.P.), and on the other Sir Ernest Cassel. While it was largely due to the efforts of Russell-Wells that the University was persuaded to institute the new degree, it was mainly on Sidney Webb's advice that Sir Ernest Cassel's benefaction took the form of an Educational Trust, of which a large part, £150,000, came to the School as an endowment of the required new teaching posts. A further substantial sum was allotted for the teaching of modern languages for the degree, partly at King's College and partly at University College and the School of Oriental Studies.¹ All the other teaching for the new degree became concentrated at L.S.E., which was further assisted in its development by a Commerce Degree Fund raised by public subscription in the business community of London, from which came in particular one substantial gift of £75,000 to meet part of the cost of the additional buildings required.

The teaching for the new degree began in October, 1919, though the additional staff needed for the complete course was only gradually built up during this and the following session. The first Cassel Professorships in Accounting and Business Methods and in Commercial and Industrial Law were filled by L. R. Dicksee and H. C. Gutteridge, respectively, while Hugh Dalton and T. E. Gregory became the first Cassel Readers in Commerce. In the course of the next few years, a Sir Ernest Cassel Professorship of International Relations, mentioned below, a Sir Ernest Cassel Professorship in Banking and Currency, a Readership in Geography and several lectureships were also created with funds from the same source.

Another event which took place early under the new Directorship and which deserves special record in these pages was the publication in January, 1921, of the first number of *Economica*, which thus completes its twenty-fifth year at the same time as the School celebrates its fiftieth anniversary. It was started as a journal devoted to all the subjects taught at the School and was issued at first three times a year under the supervision of an editorial board whose original members were Professors Cannan, Wallas and Bowley with T. E. Gregory as secretary. It continued more or less in this form till the end of 1933. From the beginning of 1934 the field covered by the original *Economica* was divided between *Economica* (New Series), devoted to Economics, Economic History and Statistics, and a new journal, called *Politica*, which, however, was discontinued on the outbreak of war in 1939. In 1923 another publishing venture closely connected with the School, *The London and Cambridge Economic Service*, was started, edited by a joint committee of the School and

¹ During the interregnum when Webb again ran the School, an agreement had been concluded with King's College by which, in addition to a transfer of the Tooke Professorship of Economic Science and Statistics (then held by Urwick) from King's College to L.S.E., and the classes in Palaeography from L.S.E. to King's, the School undertook not to teach languages and King's not to include economics or geography in its regional courses in their language department. This arrangement was modified in 1935.

the Department of Economics of the University of Cambridge. The office and secretarial staff are located at the School.

Many other comparatively minor events in these years of rapid change can only be just mentioned or must be passed over entirely. These included the temporary acquisition of Cobden's home, Duntford House, as a country retreat for staff and students (later reacquired by the donors, Mr. and Mrs. Fisher Unwin, who substituted for their gift the present Cobden Library); the recognition of the School in the Faculties of Law and Arts; the reorganisation of the Students' Union; the acquisition of Athletic Fields; the institution of the system of staff family allowances; and various changes in organisation, including a great extension in the functions of the Professorial Council. But more space must be given to the continuous physical expansion of the School, a process which accompanied its life throughout those years and raised financial problems of a magnitude not known before in its history. The first big task the new Director had to solve was the provision of adequate accommodation for an institution which was still confined to a building which had already been inadequate in 1913, when the student population was only half its post-war size. In the first post-war year it had been possible to carry on at all only by hiring as temporary lecture rooms some Y.M.C.A. huts on the site where Bush House now stands, in addition to the "temporary" structure put up in Clare Market in 1910. The grant from the Commerce Degree Fund already referred to enabled a start to be made on the new main building on the site in Houghton Street, put at the disposal of the School by the L.C.C. The position the School had by then acquired is shown by the fact that the foundation stone of the new building was laid in May, 1920, by H.M. King George V. In the following year gifts of £45,000 by the University Grants Committee and £15,000 by the L.C.C., together with £5,000 from the School's reserves, brought the total building fund to £140,000 and made it possible to proceed to the second stage of the new building programme. But even before this was completed, a new wing in Clare Market, containing on its ground floor the Cobden Library, was begun to cover the area where for so long the 'shedifices' had had to serve as temporary quarters.

Before we turn to other matters it will be advisable to continue the story of the building during these years when the School became known as "the institution on which the concrete never sets" to the point at which it was left at the outbreak of the second great war. The acquisition by compulsory purchase of the old houses along the north-west side of Houghton Street made it possible to start in 1927 on the present Offices wing and in 1931-1933 on the present Library wing and the tower on the corner of Clare Market and Houghton Street, which completed the present "Old Building." But already in 1929 some buildings south-east of Houghton Street had been acquired and building operations began which continued with little interruption

till 1938, when the "New Building" had reached its present incomplete shape. These expansions have enabled the School not merely to keep pace with the growing number of students, but also greatly to improve its amenities. The provision of tutorial rooms, seminar rooms, students' common rooms and facilities for research students had by 1939 reached a point sufficient to convert the School from a mainly lecturing institution into a teaching organisation with many of the facilities, apart from sleeping accommodation, of a residential college. There are still deficiencies to be made good, including, in particular, adequate provision for Students' Union activities, and these will not be fully met until the plans for further expansion, prepared before the war, can be put into effect. Some of the necessary land has already been acquired, but still awaits the demolition of the old houses temporarily used by the School for its needs to be more adequately satisfied.

Within this growing, but ever too narrow, shell, numbers and variety of students continuously increased. In considering a staff (regular and occasional) approaching and soon exceeding one hundred, this account will have to confine itself to the changes among the senior members, which will indicate the general trend. The next major addition came in the session 1923-24, when a new Chair of English Law was filled by the appointment of Professor Edward Jenks and the Sir Ernest Cassel Chair of International Relations by Professor Philip Noel Baker. At the same time four new Readerships in Social Anthropology, Statistics, Accounting and Sociology were filled by Bronislaw Malinowski, E. C. Rhodes, F. R. M. de Paula and Morris Ginsberg, respectively, while A. D. (later Sir Arnold) McNair came as a Lecturer in Law, becoming Reader in 1926 before resigning in 1927. During the next few years Malinowski and de Paula, as well as Rodwell Jones, Laski and Gregory, succeeded to the vacant professorships. An experiment to which great hopes had been attached, the appointment in 1927 of Professor Allyn Young of Harvard to succeed Edwin Cannan in the Chair of Political Economy, was unfortunately cut short by the sudden death of Professor Young at the end of his second session at the School.

But the great changes, which gave the professoriat of the School very largely the complexion it has at the present day, were concentrated in the few years from 1928 to 1932. As the Department of Economics was the first which was able to draw its recruits mainly from the School's own students, who thus continued the tradition of Edwin Cannan, it may be well to take the developments of this Department first and in somewhat greater detail than will be possible for the others. Professor Gregory's appointment to the new Cassel Chair of Banking and Currency in 1926 had already placed the first of the School's own students in a professorial position. It was, however, mainly from the immediate post-war generation of students that during its later growth the Department recruited itself. L. C. Robbins was the first of that generation to join the staff as Assistant and Lecturer from

1925 to 1927, to return as Professor in 1929 after a period as Fellow of New College, Oxford. He was followed in the next year by his contemporary Arnold Plant, who in 1924 had gone as Professor of Commerce to the University of Cape Town and now came in the same capacity to the Chair which replaced that from which Professor de Paula had resigned. In the same year another graduate of the same period, Frederic Benham, who now holds the second Chair in Commerce, returned to the School after six years at the University of Sydney. Two more of the students of that generation, G. L. Schwartz and Frederick Brown, joined the Department during the period. P. Barrett Whale, who was, if not a graduate of L.S.E., at least a graduate of the University of London, had already joined in 1926, and remained as Reader till his recent appointment to the Professorship of Economics at Liverpool. Of those who were drawn from outside, mention may be made of F. A. Hayek, who came as Visiting Professor in 1931 and remained as holder of the revived Tooke Chair, of J. R. Hicks, who had come from Oxford in 1926 to leave for Cambridge in 1935, and of F. W. Paish, who came in 1932 from Cambridge via Cape Town. Subsequently a stream of new talent, mostly of the School's more recent vintages, began to arrive.

Professorial appointments in the other departments of the School were proportionally numerous. A new Chair of International Law was filled in 1928 by the appointment of Professor H. A. Smith, and in 1929 Professor J. Coatman was appointed to a new Chair in Imperial Economic Relations, founded for five years from funds provided by the Empire Marketing Board, while in the same year Professor C. A. W. Manning succeeded Professor Noel Baker as Professor of International Relations. 1930 saw the peak of the wave of senior appointments with five newcomers to professorships, two of them freshly created. R. S. T. Chorley (now Lord Chorley) succeeded Professor Gutteridge in the Chair of Commercial and Industrial Law, D. Hughes Parry (now Vice-Chancellor of the University) succeeded Professor Jenks in the Chair of English Law, and Morris Ginsberg succeeded Professor Hobhouse in the Chair of Sociology. Of the two new chairs, one was a research chair of Social Biology, created as part of an ambitious programme for "the application of the results of the natural sciences to the problems of human society", and filled until 1937 by Professor Lancelot Hogben; the other, the Chair in Commerce with special reference to Business Administration, which replaced the Chair in Accountancy and Business Organisation, was filled, as already mentioned, by Professor Plant. 1931 brought three more Professors, Eileen Power and R. H. Tawney in Economic History and T. F. T. Plucknett in Legal History; and in 1932 the appointment of C. K. (now Sir Charles) Webster to the recently created Stevenson Research Professorship of International History not only completed the new Department of International Affairs but also brought this series of major additions to the senior teaching staff to a close.

All this growth would not have been possible without very large funds and the School was indeed fortunate during these years to obtain very large grants from the Rockefeller Foundation (or the 'Laura Spelman Rockefeller Memorial', as it was called till 1929) and smaller but still substantial sums from the Carnegie United Kingdom Trust and other foundations. It is scarcely too much to say that during most of the Beveridge era the growth of the School was dominated by the new developments, financed mainly from Rockefeller funds, which affected chiefly the Library, the development of entirely new fields of teaching, and the provision for research.

The first great grant from the Laura Spelman Rockefeller Memorial came during the session 1923-24 when nearly £5,000 per annum for four-and-a-half years was provided for aiding teachers in their research and a sum of nearly £6,000 towards the cost of the new buildings. During the same session the Carnegie United Kingdom Trust gave £10,000 for the expansion of the Library. Two years later another £20,000 for the Library came from the Rockefeller Foundation and £3,000 from the Carnegie Trust, while in 1926-27 the greatest grant of all became available—£36,00 for building and the Library and £144,000 for developing the work of the School, particularly in the direction of International Studies and the application of the results of the natural sciences to the problems of human society. In 1928-29 the Rockefeller Grant for research was renewed for another five years at the increased figure of £20,000 per annum and in 1930-31 another big grant of £100,000 was received for buildings and Library and a grant of £6,000 per annum for the development of post-graduate teaching and research. Up to 1934-35, when the annual grant for research was renewed for another five years at a tapering rate (indicating the cessation of grants in the future), the School had received a total of £430,000 from the Rockefeller Foundation.

Of new developments in teaching during these years, made possible by these and other grants, only a few lasting additions can be mentioned. In 1929 a course in Mental Health had been started in the Social Science Department. In 1930 a Department of Business Administration was initiated, mainly for post-graduate students, first under a separate committee, but from the session 1934-35 incorporated as an integral part of the School. In the latter year the Modern Language Department of the Commerce degree was transferred from King's College to the School and developed here with the aid of a further grant from the Sir Ernest Cassel Trustees. In 1933 the appearance of a course in Colonial Administration foreshadowed later developments in the field of Colonial Studies. About the same time a post-graduate course preparing for the examinations for the Higher Administrative Group in the Civil Service, which had gradually grown up, also took definite shape.¹

¹ From 1925 to 1927 a "Diplomatic Course" had already been provided, specially adapted for students either seeking posts in the Diplomatic and Consular Service, or already holding them.

With the session 1934-35 the teaching programme of the School had thus assumed more or less the character which it preserved till the outbreak of war in 1939. A period of comparative stability followed the rapid growth of the preceding year. The number of regular students in this particular session in fact slightly (and temporarily) receded below the peak of 1,417 reached the year before, but the continued increase in the numbers of the intercollegiate and occasional students brought the total figure for the first time to over 3 000, of whom more than 700 came from overseas. With a total annual income of £132,000, of which £34,000 came from students' fees and £52,000 from the Government and the local authorities, the School had become one of the most populous colleges of the University.

Yet in another sense the session 1934-35 marks the end of a period : in the course of it, the School lost through death not only two of its former teachers who had been connected with it since its early years, Edwin Cannan and Sir Arthur Lowes Dickinson, but also the Chairman of its Board of Governors who had accompanied the School through the period of its greater growth, Sir Arthur Steel-Maitland. He was succeeded by one of the School's old students, Sir Josiah Stamp.

Perhaps the most important single event in the few remaining years of peace was the thorough reorganisation of the Library, made possible by the completion of the new building and initiated by the appointment of Dr. W. C. Dickinson, first as joint Librarian with Headicar and after the retirement of the latter in 1935 as sole Librarian. The revision of the author catalogue then commenced is now completed, and the work at present proceeding on the fine collections of manuscripts and other material should soon make the rich treasures of the Library wholly accessible, and fully justify its claim to be the largest of its kind in Europe.

In a fuller account of the activities of the School during these years considerable space would have to be given to the various research projects undertaken or sponsored by it. Two of them ought at least to be briefly mentioned : the *New Survey of London Life and Labour* published between 1930 and 1935 on behalf of the School by Sir Hubert Llewellyn Smith, and *The Land Utilisation Survey*, commenced in 1930 under Dr. Dudley Stamp. Of the many other publications gradually added to the original three—*Economica*, *Politica* and the *Studies in Economics and Political Science* (later split up into several separate series), only the now familiar *Series of Reprints of Scarce Works*, the *Annual Survey of English Law* and the *Annual Digest of Public International Law Cases* can be mentioned.

During the last years of Sir William Beveridge's Directorship the main problems which occupied the administration and the Professorial Council were the internal constitution and organisation of the School. As a preparatory step to a definite constitution the existing practice was codified in a document printed in 1937 and entitled *The Working Constitution and Practice of the London School of Economics*

and Political Science. Several important changes in the organisation of the School, principally the creation of a "General Purposes Committee" of the Professorial Council, were carried out, but the new proposed Constitution and the suggested change in the legal status from that of a "company limited by guarantee and without power of taking profits" were still unachieved when Sir William Beveridge left the School, and two years later war put an end to all such developments.

Sir William Beveridge left at the end of the session 1936-37 on his election as Master of University College, Oxford. Mrs. Mair, who had been Secretary throughout nearly the whole of Sir William's Directorship, also retired at the end of the following session, and the almost simultaneous disappearance from the School of these two strong personalities meant that a distinct period in its development was brought to a definite close.

VII

The fifth Director of the School, A. M. (now Sir Alexander) Carr-Saunders, came from Liverpool, where for the preceding fourteen years he had been Charles Booth Professor of Social Science and Head of the Department of Social Science and Administration. He was joined a year later by a new Secretary, Walter Adams.

The first two years of the new Directorship, though nominally still years of peace, were already overshadowed by the threat of imminent war. Though many plans were made and some even brought into operation, the outbreak of war cut short all new developments. Even the few major appointments on the teaching staff made in the course of normal change proved in fact to be merely temporary. J. B. Condliffe, who had come from the League of Nations in 1937 to succeed Professor Sargent to the Chair of Commerce, left again for America shortly after the outbreak of war; and D. H. Robertson who, in 1938, on Professor Gregory's appointment as Economic Adviser to the Government of India, had succeeded him in the Chair of Currency and Banking, joined the Treasury at the outbreak of war and was called back to Cambridge to succeed Professor Pigou before he had been released from this war service.

The war itself brought for the School even bigger changes than had the other war twenty-five years earlier. In accordance with the Government's announced policy of evacuation, plans for transfer had been prepared beforehand and the School was fortunate enough to secure accommodation at Peterhouse, Cambridge. A new building of the College, "The Hostel" (or "New Court", as it was at first called) was put at the disposal of the School by the Governing Body of Peterhouse and became its administrative headquarters. "Grove Lodge", a large private house in Trumpington Street beyond the Fitzwilliam Museum, was taken to provide classrooms, to house the Lending Library and to provide room for all the students' activities,

while several other houses were obtained to accommodate the staff and various other departments of the School. Lectures, which were mostly provided as part of a joint programme with the Cambridge Faculty, were generally given in the Cambridge lecture rooms, and Cambridge library facilities, including the University Library and the Marshall Library, were made available to L.S.E. students.

The buildings of the School in London, excepting only the Library, had been taken over by the Government at the outbreak of war. It may be here recorded that they escaped any more serious damage than the use by government offices in wartime conditions and a few nearby bombs were apt to cause. Most of the contents of the Library were evacuated to depositories in various parts of the country, while the students' Lending Library and the various seminar libraries accompanied the School to Cambridge. From 1940 onwards the rooms of the Library were the only quarters the School had in London; they had to serve not only for many committees and the interviewing of such London students (mostly graduates) as remained, but often also as air raid shelters or sleeping accommodation for the Director or other members of the staff whom School business brought to London.

Though the outbreak of war at once considerably reduced the number of staff and students, during the first session in Cambridge the activities of the School could still be maintained at a fairly high level, with an active graduate department and continuing research activities. It was also possible to continue a somewhat reduced evening school in London at premises taken for the purpose at Canterbury Hall, Cartwright Gardens. The position, however, changed entirely when the war began in earnest in the spring of 1940 and particularly with the beginning of the bombardment of London at the end of the summer. The thorough mobilisation of the available brain-power to satisfy the needs of the Government departments deprived the School of the greater part of its remaining staff, and conditions in London in the early autumn of 1940 not only frustrated an attempt to return but also made inevitable the abandonment of the evening courses. The small group to which the teaching staff had been reduced in the following session could not, indeed, have provided even the indispensable minimum of instruction if it had not been for close collaboration with the Department of Economics of Cambridge, and with the Departments of Economics and Law of University College and the Department of Law of King's College, London, which successively joined the School in Cambridge. The difficulties were particularly great because the numbers of students had unexpectedly not been reduced in the same proportion as those of the teachers. Even at its lowest point, in the session 1940-41, the number of students registered at the School in Cambridge still totalled 615, rising again to nearly 900 during the session 1944-45. These figures do not include those attending courses given at the request of Government departments on Statistics for Junior Civil

Servants, Personnel Management and Colonial Administration. At the same time the composition of the student body underwent inevitable changes which caused in addition a somewhat unequal distribution of the burden of teaching. The proportion of women students greatly increased and with this increase the relative size of the departments of the school especially favoured by women, particularly sociology, grew quite out of proportion to the rest. And as most of the students were allowed to remain at the School for only one or two years, and the average age of entry was also somewhat reduced, the very young came decidedly to preponderate in the student body. The graduate school shrank to very small proportions and towards the end of the war comprised little more than a small group of foreign students stranded in England.

Yet with all its difficulties and inconveniences the years in Cambridge were not without compensation for the students and for those members of the staff who had been fortunate enough to find homes in Cambridge or to be given rooms in Peterhouse or other colleges. The hospitality shown by Peterhouse will long remain for many teachers one of their pleasantest memories of the war years. As for the students, they enjoyed most of the advantages which life in the older universities provides, together with a teaching programme in which the combined efforts of London and Cambridge offered a variety not much smaller than that available at the School in normal times. It gave also somewhat more intimate contacts with the staff than the much bigger institution in London had allowed. And although the constant uncertainty and the continuous change were no doubt somewhat unsettling, it can fairly be said (and this is confirmed by examination results) that at no time were academic standards lowered.

The last session at Cambridge was the fiftieth in the School's history and should strictly speaking bring this record to a close. But as the end of the war approached the imminent task of again building up a full staff and generally preparing for the resumption of normal work in London began to demand almost as much attention as current activities, and it is largely because of the steps taken during this last session that the School was in a position to enter upon its fifty-first session at something like full scale.

The losses of personnel suffered during the war, if only to a small part as direct result of it, had indeed been heavy. One of the first direct victims of enemy action was the former Chairman of the Board of Governors, Lord Stamp, who was killed by a bomb in April, 1941. He was succeeded by Sir Otto Niemeyer. Earlier in the same year the School was deprived, by the sudden and unexpected death of Professor Eileen Power, of one of its most successful and popular teachers, and two years later lost by the early death of Professor B. Malinowski another of its best-known members. The successive retirements of Professor A. Wolf, Professor L. Rodwell Jones, and C. M. Lloyd, the Head of the Social Science Department, added further vacancies

to the chairs still unfilled since the retirement or resignation of Professors Bowley, Condliffe and Robertson.

It was possible to fill most, though not all, of these senior posts before the School returned to London. Of the new Professors, R. G. D. Allen (Statistics), T. S. Ashton (Economic History), F. C. Benham (Commerce), R. W. Firth (Anthropology), T. H. Marshall (Social Institutions and Head of the Social Science Department), and L. D. Stamp (Geography), only Professor Ashton, who came from Manchester, is a newcomer to the School, while all the others were promoted from the existing staff. Another post of professorial rank, that of Librarian, had also to be filled in 1943 when Dr. W. C. Dickinson, after eleven years service and with most of the task of reorganisation of the Library completed, left for the Professorship of Scottish History at the University of Edinburgh. He was succeeded by G. Woledge, Librarian of Queen's University, Belfast. When finally towards the end of the war it became known that the School's Secretary, W. Adams, would not return from Government service, Miss E. V. Evans, who had been Registrar of the School since 1920, succeeded to the post.

If it had not been for the delay in the return of its buildings by the government offices which had occupied them during the war, the School would have reopened in London just fifty years, almost to the day, after it had first opened its doors. As it was, it had to postpone the opening of the term by three weeks and on October 29th started in only part of its premises, hastily put in order, and with a staff which, though well back on its way to normal, still lacked a number of its best known teachers, who could not yet be spared from the high posts in the Civil Service which they had occupied during the war. Several of their younger colleagues will not return at all since they have created for themselves positions for which the modest post of a lecturer at the School offers no adequate equivalent. There are thus still many gaps to be filled, and the central department of economics is for the time being the one which is most depleted.

Already the influx of new students suggests that the problem of the near future will not be whether the School will regain its former size and position, but rather how to limit too rapid a growth and to prevent it from reaching too unwieldy a size. But, as one of the recent Annual Reports of the Director points out, while "the School already embraces the whole range of social studies and there is no need to extend the academic territory, much of the field is very lightly occupied and the School is at present unable to make provision for many of those specialisms which have emerged in the field of social studies within the last two decades". A report on the plans for the future, submitted in 1944 at the invitation of the University Grants Committee, proposes accordingly the foundation of six additional chairs, eleven new readerships and a number of lectureships. Even before these hopes become realities there will also be again urgent need for further building, especially for the Library, which is approach-

ing the limits of its present storage capacity. So even if no further extensive growth is planned, there are already the outlines visible of an organic development which waits only for favourable conditions.

Of the influence the School has exercised in the past on the life of the country no better testimony could be desired than the fact that the present Government contains no fewer than four of its former teachers in the persons of the Prime Minister, the Chancellor of the Exchequer, the Secretary of State for India and the Minister of State, while three other past or present members (Professor Chorley, the Hon. F. A. Pakenham and William Piercy) have just been raised to the peerage. In addition to Sidney Webb (created Lord Passfield in 1927) and the late H. B. Lees-Smith, who were members of an earlier Labour Government, H. A. L. Fisher, Lord Kennet, Viscount Samuel, Lord Simon and the late Sir Arthur Steel-Maitland may be mentioned as other lecturers of the School who at one time or another held government posts as liberals or conservatives. In 1934 the O.M. was bestowed on Lord Passfield expressly in respect of services to economics and politics. To-day, as before, the School harbours representatives of all the major political groups as well as probably an even larger number of men and women who, remote from all political connections, are devoted entirely to the advancement of their chosen subjects.

The services which so many members of the staff of the School and a very large number of its students have rendered to the country during the recent and earlier world wars form a long and highly creditable story which will have to be told elsewhere. That during the coming period of reconstruction the minds it has trained in the understanding of social and economic problems will be needed as urgently as during the war there can be little doubt. The main concern of the School must now be to see that preoccupation with immediate problems does not result in neglect of the training of a new generation and that the drain on academic talent caused by the great success of the "professors" as civil servants is not so heavy as to impair the future stream of similarly qualified men and women.

F.A.H.

The Subjective Theory of Value and Accounting "Cost"

By G. F. THIRLBY

(Department of Commerce, University of Cape Town).

IN a recent article² in *The Economic Journal*, Mr. Harry Norris (an accountant) puts out certain "feelers" into the overlap of the provinces of economists and accountants, hoping thereby to "stimulate economists into thinking about accounting procedures in the light of economic science". Mr. Norris tells us that a comparison of ideas is something of which accountants, and perhaps economists, stand in need, though economists may find difficulty in discovering exactly what accountants mean by certain terms which they use. Speaking of the subject in which he is particularly interested—income—he acknowledges the substantial truth of Professor Canning's view that accountants have not developed, and probably have never put their minds to the task of developing, any complete philosophical system of thought about it. It is only fair to add that Mr. Norris is "not able to find any great clarity of thought among economists as to what constitutes income".

Some time ago, having suggested that "economic science has not yet become integrated into the philosophy of accounting teachers and writers," I ventured to recommend that the results of such a study as Mr. Norris desires should form part of the curriculum of university students of commerce, saying that "the ubiquity of accounting and the need for its reconciliation with economics rather suggests that part of a second course in accounting in the commerce curriculum should be called 'Accounting in the Light of Economic Analysis'".³ It is natural, therefore, that I should welcome, and even try to respond to, Mr. Norris's invitation.

My subject, however, is not income, but a term which Mr. Norris uses incidentally, namely, cost. And I must confess that the main stimulus prompting me to discuss it was, not Mr. Norris's article, but one written by Professor C. S. Richards.⁴ In his article, in which he

¹ A paper read to the Cape Town branch of the Economic Society of South Africa on 13th April, 1945.

² Harry Norris, "Notes on the Relationship between Economists and Accountants", *The Economic Journal*, Vol. LIV, Nos. 215-16, December, 1944.

³ G. F. Thirlby, "The University Commerce Curriculum", *The Sociological Review*, Vol. XXXIV, Nos. 3 and 4, July-October, 1942.

⁴ C. S. Richards, "The Task before Us: with special reference to Industry", *The South African Journal of Economics*, Vol. 12, No. 3, September, 1944.

emphatically recommends the practice of cost-accounting, Professor Richards himself deplors the use of "vague phrases and undefined terms . . . which lack clarity and the implications of which are seldom analysed nor their consequences appreciated". But, although perhaps no term is used more loosely nowadays than "cost", and although Professor Richards, in his frequent uses of the term, is traversing ground covered by both economists and accountants, he offers no discussion of the different meanings attached to the term in economics and accounting. The difference is fundamental.

The task that I have set myself is, not to deal exhaustively with all details of cost-accounting practice, but to suggest (1) the meaning of cost to a person—whom I shall refer to as the subjectivist—whose thought is conditioned or disciplined by the Subjective Theory of Value; (2) the place and significance of cost in this sense in a philosophy of business administration; (3) the different meaning that the term has to an accountant; (4) the relationship of cost in this accounting sense to the subjectivist's philosophy of business administration.

(1) THE MEANING OF COST TO THE SUBJECTIVIST. To the subjectivist, cost would be understood to refer to the prospective opportunity displaced by the administrative decision to take one course of action rather than another.¹ Cost is inevitably related to the behaviour of a person. The person is faced with the possibility of taking one or other of (at least) two courses of action, but not both. He considers the relative significance to him of the two courses of action, and finds that one course is of higher significance than the other. He "prefers" one course to the other. His prospective opportunity of taking the less-preferred course becomes the prospective cost of his taking the more-preferred course. By deciding to take the preferred course, he incurs the cost—he displaces the alternative opportunity. The cost is not the *things*—e.g., *money*—which will flow along certain channels as a result of the decision; it is the loss, prospective or realised, to the person making the decision, of the opportunity of using those things in the alternative course of action. *A fortiori*, this cost cannot be discovered by another person who eventually watches and records the flow of those things along those channels. Cost is not something which is objectively discoverable in this manner; it is something which existed in the mind of the decision-maker before the flow began, and something which may quite likely have been but vaguely apprehended.

The alternatives between which the final selection is made are themselves a result of personal discovery and selection. The available alternatives cannot be said to exist unless the person making the

¹ "The conception of real costs as displaced alternatives is now accepted by the majority of theoretical economists." L. Robbins, Introduction to Wicksteed, *The Common Sense of Political Economy* (London, 1933; Routledge), p. xviii. It is significant that Professor Robbins adds to these words "but . . . we are still a long way from making it part and parcel of our daily speculations on those problems to which it is most relevant", and that on a previous page (p. xv) he has stated that "since the war [1914-18], there has appeared a great mass of literature on the cost question which, for all the awareness it displays of the essential problem at issue, might for the most part have been the same if Wicksteed had never written".

decision is aware of them.¹ If they could, their number would be infinite and their consideration by the decision-maker intractable. "Any number of potential applications 'compete' for the use of the productive services".² But the human being is not omniscient. It is obvious that the very limitation upon human capacity necessitates the selection for consideration of only a few of the alternatives, and that the selection might easily be a different one, either if the particular administrator (decision-maker) happened to notice different alternatives, and make a different selection, or if a different administrator made the selection.

The act of discovering cost, which really means discovering which of the considered alternatives is to be rejected, inevitably involves valuation. The decision-maker, in arranging the opportunities in order of preference or significance, is performing what is essentially an act of valuation, valuing the preferred opportunity higher than the alternative to be rejected.

This valuation necessarily involves estimates of happenings in the future about which the decision-maker can never be certain. The decision is based upon *ex ante* reckonings, or advance calculations, which involve looking into the future, and consequently must, even for this reason, be matters of opinion. Yet "such advance calculations are made every day by scores of business men, either for themselves when they are making up their minds about the prospects of a contemplated business venture, or for potential partners or lenders when such are invited to consider participation in the enterprise".³ This statement was intended to refer to plans for new industrial undertakings, but its reference can be legitimately extended to cover plans preceding all business decisions.

Cost is ephemeral. The cost involved in a particular decision loses its significance with the making of a decision because the decision displaces the alternative course of action. *If* the accepted course of action *were completely* planned at the time of the decision and *if* the course of action *were* taken and *actually carried out* in accordance with the plan, no new decision—choice between alternatives—occurring in the interim, then no cost—no cost of "production"—could be said to occur in the interim, however many times money was converted into goods by purchase or hire, and however many times goods were converted into other goods and sold. In the meantime, production would have been *proceeding according to plan*—the plan accepted by the decision and put into operation as a result of it—or, in other words, it would have been proceeding under *standing orders*.

¹ Cf., "Resources and needs exist for practical purposes only through somebody knowing about them and there will always be infinitely more known to all the people together than can be known to the most competent authority": Hayek, "Scientism and the Study of Society", *ECONOMICA*, (New Series), Vol. XI, No. 41, February, 1944, p. 37.

² Fritz Machlup, "Competition, Plurality and Profit", Parts I and II, *ECONOMICA*, Vol. IX (New Series), Nos. 33 and 34, February and May, 1942. Part I, p. 9.

³ Machlup, *ibid.*, Part II, p. 156.

But usually new decisions will be made before the first one is completely implemented. And cost occurs every time a business decision is made, however large or small the matter under consideration, whether the decision is upon such a matter as to delay the execution of a small order for goods so that a previously unexpected rush order may be accepted, or whether it is to set up and carry on a large industrial enterprise.

The decision is the *primum mobile* of production, without which nothing that occurs can be regarded as production. It is the logical starting point for any investigation which seeks an explanation of why production or the industrial structure is what it is.

(2) THE PLACE AND SIGNIFICANCE OF COST IN A PHILOSOPHY OF BUSINESS ADMINISTRATION. The subjectivist sees "the whole direction of resources to ends as a continuous selection between alternatives, guided throughout by a weighing of the significance of the anticipated results, in which the 'cost' of adopting any alternative is simply the relinquishing of some other alternative; reward and sacrifice alike being measured and determined by the ultimate significance of the respective products, as anticipated by the producers".¹

By discussing an aspect of the functioning of an imaginary firm,² I shall try to explain how this must be presumed to apply to the internal workings of a modern departmentalised firm, with divided administration. But first I must refer to the co-ordination process in a firm in which administration is *not* divided—i.e., in a one-man business.

We can imagine a man in a small retail business deliberating upon the question of how much money to retain (or acquire) for the purpose of investment in stock which is to be bought and sold over a (relatively short) forthcoming period. We will suppose that he is already in the middle of his deliberations. He has already considered a certain sum to be worth while investing in this manner. He has decided that he could do better with it there than elsewhere: the cost would be worth while incurring. If now the man is thinking of the advantage of using £50 more than that sum, he will be comparing (1) the significance of the alternative opportunity of using (or not acquiring) that increment of money, with (2) the significance of the result of investing it in stock and realising the stock. And obviously he cannot consider (2) without considering (3) what extra stock he would buy at what extra price, and how much extra its sale would be likely to realise. Further, if he allows himself to consider different kinds of stock, he cannot consider (3) unless he considers (4) to which kind of stock to allot the £50, or in what proportions to allot it to different kinds. In other words, *there must be ex ante co-ordination of (1) the significance of the alternative opportunity of using (or not acquiring) the increment of*

¹ Wicksteed, *op. cit.*, p. 820.

² I propose to confine my discussion in this section to a single co-ordinated decision *ex ante*. It is my hope that this will be adequate to suggest that an understanding of this co-ordinated decision *ex ante* is the appropriate starting point for the development of a philosophy of modern large-scale business organisation.

money with (2) the significance of the eventual returns from the investment of the increment in stock; and this co-ordination incidentally involves other acts of co-ordination, namely (3) the co-ordination of the prospects of buying goods with the prospects of selling them, and (4) the co-ordination of the relative significance of the prospective returns from investment in alternative kinds of goods.

We may now suppose that the man considers the retention (or acquisition) and investment of this extra £50 to be advantageous, that he then considers, in the same way, the advantage of using a further £50, and so on until eventually he thinks that the investment of another £50 would not be worth while—and that consequently he decides that the best sum to retain (or acquire) and invest is the total sum of money which does not include this last increment.

The description of the man's deliberations up to this point is sufficient to illustrate the nature of the co-ordinated decision *ex ante* which it is necessary to comprehend before a satisfactory approach can be made to the understanding of the conduct of business under divided administration. But it will be convenient for my later discussion to assume that a contractual rent payment is made during "the forthcoming period". So I am obliged to elaborate a little.

The deliberations cannot be said to be fully co-ordinated and completed at this point. The man's calculations have led him to the conclusion that, in so far as he has calculated, it will be advantageous to him to continue business for "the forthcoming period". But it is possible that this advantage would disappear if he considered the possibility of otherwise disposing of, not only the money, but also other factors (e.g., his premises or the lease of them) which he will use for the business in "the forthcoming period" if he does decide to carry it on.

To avoid a long and complicated discussion concerning the extent to which these other factors can be varied in quantity, and the effect of varying them (e.g., the effect of letting off portions of the premises, or extending them, or allotting different portions to different portions of the business), I shall assume that the man does not at this time allow such variations to enter into his calculations. This seems to be a reasonable assumption to make, because, as the objective possibilities are infinite, a person must impose some rules ("standing orders") upon himself, intuitively or otherwise, to limit the number which he considers and the times at which he considers them. But I shall allow him to consider the *complete* disposal of the business, for a period or permanently.

I shall assume also that the man has a lease of the premises for a period longer than what I referred to as "the forthcoming period". The co-ordination of the result of the calculations (or budgeting) already considered with the question of whether it would be advantageous to dispose of the business must therefore be considered to be a problem of co-ordinating the result of the calculations (or budgeting) already considered with a wider budgeting ("wider" here referring to a longer

time-period). It must be so regarded because the significance of the opportunities of disposing of the business for "the forthcoming [relatively short] period" are not likely to be considered without taking into account what would happen in the more distant future. Why? For the simple reason that to close down in the meantime would affect subsequent prospects—e.g., some contractual rent might be saved by sub-letting the premises for "the forthcoming period", but some regular customers might not return after their enforced absence.

We may now suppose that the prospective advantage shown by the narrower calculation is either so great that the man is not prompted to consider this wider budgeting, or that, if it is small enough to prompt him to do so, his wider budgeting has led him to the conclusion that to close down temporarily or permanently would be to his disadvantage. Obviously he might come to this conclusion although his prospective net money returns for "the forthcoming period" were lower than the contractual rent payment to be made for "the forthcoming period", and although he might consider it possible to reduce the difference by sub-letting for "the forthcoming period": his decision would depend partly upon what he thought of his more distant prospects. But whether the contractual rent payment is expected to be covered out of net money returns will not affect the issue to be discussed.

The language in which I have described this illustration of the co-ordination process of the small business man at the street-corner shop would perhaps be quite unintelligible to him; but the description is, I suggest, one that the subjectivist would give of a process that he supposes not only the small man at the street-corner shop, but also all firms, trading or manufacturing, to be continually performing.¹ The subjectivist supposes the equilibration of which he speaks, and the functioning of industry and commerce to which this equilibration really refers, to depend upon the performance of the process, the decision based upon it, and the acceptance by the firm of the consequences of the decision. *The acceptance of the consequences* includes the acceptance of the "automatic sanction"² for error. The co-ordination process and the supervision of the execution of the decision may be loosely or negligently performed, or, on the other hand, they may be rigorously or carefully performed. They may be performed according to any limiting rules that the firm chooses to impose upon itself. Different aspects of the process and execution may be delegated to different people. But, however this may be, the firm is supposed to accept the consequences of what it does. If, for example, a firm relapses into and works upon an unjustified assumption that the events of "yesterday" will be repeated "to-day", and tacitly issues standing orders based on such an assumption, it is presumed to do so on its own responsibility.

The process, decision and framing of orders for the execution of

¹ The process would, I suppose, be commonly referred to as the planning of the acquisition (or retention) and use of short-term funds, or short-term capital, or working capital.

² This term is used by Brutzkus in *Economic Planning in Soviet Russia*.

the decision constitute an act of business administration. In modern undertakings, this act of business administration is often divided among a number of people (administrators). The lines of fracture of the act of business administration might be different in different cases. One man might be responsible for estimating the market for goods on the buying side and for the actual buying, another for estimating the market for goods on the selling side and for the actual selling. This could well be the arrangement in a firm in which purchases were made abroad and sales made locally. One or other of these men might be responsible for estimating the market for short-term funds and actually negotiating loans; or a third person might attend to this. The work on the buying side, or on the selling side, might be split, each of several men being responsible for the market for a particular type or range of goods. Or each of several men might be responsible for both the buying and the selling market for one of several types or ranges of goods. In one or other of these situations there might be a person who accepted responsibility for the estimates and actions of those amongst whom part of the work was so divided, and for the co-ordination of their estimates. This man, responsible to a higher authority, would be giving advice and criticism to those responsible to him, without usurping their initiative and discretion as administrators. Clearly he would be a man of broad knowledge of men and, probably, of the markets in which his sub-administrators were operating: the judgment of people's behaviour in advance is of the essence of administration—a matter which tends rather to be obscured when one speaks of judging of what people are going to do as "estimating the future market conditions".

Whatever the lines of fracture are, *the complementary activities of the people (administrators) amongst whom the act of business administration is divided must be presumed to be co-ordinated, for the purpose of making the ex ante decision, by one, or by a committee¹ of all or several, of the administrators.* At the same time the very division of function gives rise to the danger of loose co-ordination, with the firm's left hand not knowing what its right hand is doing.

The arrangements, or rules, laid down by itself, which the firm adopts to determine this division of function and co-ordination, together with other regulations, might be called the "standing orders" of the firm; and a tree describing the division of the administrative function and co-ordination "the administration chart" of the firm. The way in which administrative authority—authority to make decisions which, *ex definitione*, involve cost—is divided and distributed through the organisation, and how it is circumscribed, this arrangement is itself a matter for administrative decision. It is a matter of choice between this structure and some other. It involves subjective judgment; consequently, no "right" way can be objectively determined.

The organisation that I have chosen to illustrate the co-ordinated

¹ On the limitations of committee management, see Hayek, *op. cit.*, p. 31, footnote 2.

decision *ex ante* is one in which there are several (two) people, each responsible for the buying and selling market for a particular range of goods. Another man accepts responsibility for their activities. A third is responsible for estimating the market for short-term funds and actually obtaining them. This arrangement enables me to confine my discussion, in the main, to the aspect of the process of co-ordination relating to the linking of the market for short-term funds with the market for the goods into which the money is to be converted, without discussing in detail the co-ordination of the buying and selling markets for goods.¹

Let us suppose that, instead of being the small man at the street-corner shop, our firm is a mercantile firm, e.g., a department store, working under divided administration. Each of two department managers (buyers) *A* and *B* has discretion as to what varieties of goods he acquires for sale, and is responsible for making and co-ordinating the forecasts of the buying and selling markets for those goods. A higher authority, whom we will call the Merchandise Manager, is responsible for settling the *proportions* in which money is allotted to the buyers for investment in stock. A still higher authority, whom we will call the highest authority, settles the total amount to be allotted to the Merchandise Manager for this purpose. All are planning their operations for "the forthcoming period". The highest authority will carry out the process of determining the optimum amount of money to invest in the stock in the same way as the man at the street-corner shop did, except that its study of variations in anticipated results inside the business will not go further than considering the significance of variations of revenue which the Merchandise Manager offers to try to get from the buyers if one quantity of money or another is allotted to him. When it is eventually made, the decision of this highest authority, which will be the co-ordinated decision *ex ante*, will finally settle the total amount of money, and incidentally any contractual payments for its use, planned to be invested in stock in the forthcoming period, and may be considered to be reserved to the highest authority by standing orders which require the Merchandise Manager to submit his offers to it.

But before the Merchandise Manager can do this, he will need to obtain offers from the buyers. He will require from *A* estimates of the variations in revenue which *A* expects to make with variations in the quantity of money allotted to him, and he will require from *B* estimates of the variations in revenue which *B* expects to make with variations in the quantity of money allotted to him, so that he—the Merchandise Manager—can choose whether to allot to *A*, or whether to allot to *B*, each successive increment of money which may be allotted to him by the highest authority, and so decide what increment of revenue to offer the highest authority for each increment of money which may be

¹ My abstract discussion is founded upon a section of a concrete discussion of Budgetary Control in Department Stores given some years ago by Professor Arnold Plant in his lectures on Business Administration.

allotted. The decision required of the Merchandise Manager is how to distribute the allotment of money, whatever it may be, between the buyers. This decision may be considered as being reserved to him by standing orders which require the buyers to submit their offers to him.

But before A (or B) can do what the Merchandise Manager requires of him, he will need to consider how to distribute his allotment of money from the Merchandise Manager, whatever that may turn out to be, amongst the purchases of the different kinds of goods that he contemplates buying, $a_1, a_2 \dots$ (or $b_1, b_2 \dots$). Just as the Merchandise Manager is conceived to be dosing prospective increments of money between A and B , so that he may decide what increment of revenue to offer the highest authority for each increment of money that may be allotted, so A (or B) is conceived to be dosing prospective increments of money between $a_1, a_2 \dots$ (or $b_1, b_2 \dots$), so that he may decide what increment of revenue to offer to the Merchandise Manager for each increment of money that may be allotted. The decision required of A (or B) is how to invest the allotment of money, whatever it may be, in the various kinds of goods. This decision may be considered to be reserved to him by standing orders. (Obviously the decision requires simultaneous co-ordination of buying and selling prospects.)

So A (B) co-ordinates the prospects of investment in different channels in his own field (department); the Merchandise Manager co-ordinates A 's and B 's investment prospects; the highest authority co-ordinates the Merchandise Manager's investment prospects with the advantages of using money outside the business (or of not acquiring money). After choosing the optimum sum for investment in the business, it makes the co-ordinated decision *ex ante*. The co-ordinated decision *ex ante* settles the amount of money to be acquired by (or retained in) the business and allotted to the Merchandise Manager, the proportions of it to be allotted by the Merchandise Manager to A and B , and the proportions which A (or B) intends to allot to the purchase of $a_1, a_2 \dots$ (or $b_1, b_2 \dots$). At the same time, it settles any contractual obligations by the firm for the use of the money, the amount of revenue that the highest authority expects to receive eventually from the Merchandise Manager, the amount of revenue that the Merchandise Manager expects to receive from A and from B , the amount A expects from the sale of a_1 and from the sale of $a_2 \dots$, and the amount B expects from the sale of b_1 and from the sale of $b_2 \dots$. The amount of money to be used by the firm, plus any contractual obligations for the use of the money, on the one side, and the revenue expected from the Merchandise Manager on the other side, might be referred to as the budget of the highest authority, and be thought of as a wider budget (than that of the Merchandise Manager). The allotments of money to be made to A and B , and the revenue expected from them by the Merchandise Manager, might be referred to as the Merchandise Manager's budget, and be thought of as a wider budget (than that of

A and *B*). Its details are not a matter concerning the highest authority directly. The amounts of money to be spent by, and the revenues expected by, *A* (or *B*) might be referred to as *A*'s (or *B*'s) budget, and be thought of as a narrower budget (than that of the Merchandise Manager). Its details are not a matter concerning the Merchandise Manager directly. The term "estimated profit calculation"¹ might be used throughout as an alternative expression for "budget". The contents of the budgets are anticipated results (of the co-ordinated decision *ex ante*) which are expected to become objective. They do not disclose costs in the subjectivist's sense of the word.

What costs do occur in this process? Cost to the highest administrator is the opportunity of disposing, outside the business, of money in its possession and money that it might acquire. This is not a cost to the Merchandise Manager. That is to say, the question of whether to allot money to the Merchandise Manager instead of using it outside the business (or instead of not acquiring it from outside the business) is excluded from consideration by the Merchandise Manager by standing orders which reserve the question for consideration by the highest authority. Cost to the Merchandise Manager is the sacrifice that he incurs, in deciding to allot (any particular increment in) the quantity of money to *A*, by displacing the opportunity of allotting it to *B* instead (or *vice versa*). But this is not a cost to *A* (or *B*). That is to say, the question of allotting money to *B* instead of to *A* (or *vice versa*) is excluded from consideration by *A* (or *B*) by standing orders which reserve the question for the consideration of the Merchandise Manager. Cost to *A* (or *B*) is the sacrifice that he incurs, in deciding to allot (any particular increment in) the quantity of money to goods a_1 (or b_1), by displacing the opportunity of allotting it to $a_2 \dots$ (or $b_2 \dots$) instead (or *vice versa*). Cost occurs whenever, and only when, an administrator makes a decision, choosing between prospective alternative courses which appear to be open to him, between which he has discretion to choose. Under divided administration, the action open to a particular administrator is dependent upon the action to be taken simultaneously by other administrators. Consequently, co-ordination of his plans with those of the other administrators must occur before his final decision can be made.

We may assume, without elaborate discussion, that the highest administrator has co-ordinated the result of this narrower budgeting process with the wider question of whether the result justified the use of the premises for the forthcoming period—in the same way as the man at the street-corner shop did—and that the highest administrator has decided that the business shall continue for the forthcoming period. A contractual rent payment will fall due during that period.

(3) THE DIFFERENT MEANING THAT COST HAS TO AN ACCOUNTANT. "Cost" to the accountant means something quite different. What he refers to as "cost" would, but for a trick, or imaginary conversion,

¹ A term used by Machlup, *ibid.*, Part II.

that he performs, be an objective result which emerges (1) after all the decision-making which has involved cost has been done; (2) as a result of the decision-making; (3)—which, of course, follows from (2)—as part of the *ex post* events which are described or implied in the *ex ante* plan to which the anticipated profit calculation belongs.

The trick, or imaginary conversion, which he performs is this. He assumes (implicitly) that when money has been spent or contracted to be spent to acquire things, the money has not necessarily and inevitably been spent or contracted to be spent as it has, leaving the business with the things acquired, but that the things acquired carry the money with them, and that bits of the things flowing into different departments or products of the business carry bits of money with them, or that bits of the life-period or assumed life-period of the things acquired carry bits of the money with them; and that the money in question has not been wholly spent so long as any of the things acquired and still possessed has one of the bits of money attached to it. The bits of money are "costs". These "costs" are carefully distinguished from values: "it is costs we deal in, not values". (Mr. Norris, below.)

This description of the accountant's behaviour and attitude seems to be confirmed in the following statement appearing in Mr. Norris's article.

"Earnings to an accountant are simply money revenues from operations minus the cost of performing those operations. There is an outflow of money costs to be classified (the labels used in the classification tree are wages, power, materials, components, finished articles, and so on) and linked up with the inflow of money revenues. The product flows out to the customer, a legal claim for money flows into the business as revenue. It is costs we deal in, not values. Some costs we attach to bits of material, writing them off when the material is sold, others we attach to the calendar and write off according to lapse of time. There are complications in this; and there are, in my view, some illogicalities and errors in common accounting practice; but what we *aim* to do is simply what I have stated, to find the surplus of revenue over expired costs. To do this one may have occasion to *refer* to the incidence of values—of raw materials for instance—but figures of value are not used *as such*; they are merely an aid in cost apportionment."¹

Mr. Norris refers to the "cost of performing . . . operations". To the subjectivist, the cost of performing an operation is the administrator's alternative opportunity displaced by that administrator's decision to have the operation performed. The displaced opportunity might be the performance of the operation in some other way, or the following of some entirely different course of action. Not so to the accountant. The accountant thinks first of an observable (objective)

¹ Norris, *op. cit.*, p. 376.

"outflow of money costs"; something which can be computed objectively by observing and recording. It is clear that this "outflow of money costs" is primarily understood to be the money flowing out of the business in exchange for things to be used in the business.

Subsequently, however, the accountant shifts his attention from the money outflow to the *inflow*, of the things received in exchange for the money outflow, into the business and thence into the operation and the product. It might be thought that if the accountant rigorously pursued his objective study of flows, he would record these inflows of factors into the product in quantities of things, without attaching figures of the money paid for them. It is perhaps not quite clear from Mr. Norris's statement that the accountant does attach the money figures; but it is well known that such is his practice. That is what is meant or implied by saying that "some costs we attach to bits of material . . . others we attach to the calendar . . .". The "costs" are then "expired" by writing off in the manner indicated. Clearly, the accountant is here tacitly assuming that, or behaving as if, the money which is spent, or contracted to be spent, on the purchase of factors is not spent, or contracted to be spent, at the time when it is actually spent, or contracted to be spent, but remains attached to the factors, to be spent subsequently according to whatever arbitrary or "conventional" method of "expiring" the money ("cost") is adopted by the accountant.¹

(4) ACCOUNTING "COST" RELATED TO THE SUBJECTIVIST'S PHILOSOPHY OF BUSINESS ADMINISTRATION. In section 2, the discussion of the co-ordinated decision *ex ante* had proceeded to the point at which the decision had been made and the budgets or estimated profit calculations of the various administrators had come into existence. The place of accounting "cost" can now be discovered by discussing subsequent events.

It follows from the opening quotation of section 2 that, in the subjectivist's philosophy, everything that can be regarded as part of the firm's business operations ("production") must be the result of one administrative decision or another.² Some of these results, occurring subsequently to the co-ordinated decision *ex ante* which is under discussion, will or may be the results of earlier decisions which had not yet been fully implemented: such, for example, as the contractual rent payment accruing due during "the forthcoming period". Any other results must, *unless and until a further administrative decision is made*, be results of the particular co-ordinated decision *ex ante* which is under discussion. If no new decision *did* occur, and if the co-ordinated decision *ex ante* were completely implemented—a supposition which implies that all anticipations proved to be sufficiently

¹ That economists sometimes tacitly adopt the same sort of assumption is apparent in a definition of depreciation cost by Mr. Hawtrey which is criticised in G. F. Thirlby, "Permanent Resources", *Economica* (New Series), Vol. X, No. 39, August, 1943, pp. 247 *et seq.*

² This implies that results of branches of standing orders issued to executives and other people, and results of "acts of God", are excluded from "production".

correct to allow complete implementation—objective results would occur which would correspond exactly with the plans of the several administrators. Eventually *accounts* could be produced, correctly recording results, which would correspond exactly with the budgets or estimated profit calculations.

None of these budgets or accounts would include cost in the subjectivist's sense. To what extent would they include "cost" in the accountant's sense?

The contents of the several budgets (of which the subsequent accounts are replicas) have already been described. If the money used were borrowed money, the account of the highest administrator would include any objective payment ("interest") for the use of money. This appears to be an "outflow of money costs", that is to say, "cost" in the accountant's sense before he shifts his attention from the money outflow to the *inflow* of things acquired by the expenditure of money. The item does not appear in the account—as I have envisaged it—of the Merchandise Manager, or of *A* or of *B*: it is no concern of these people. If the accountant chose to "attach" the item, or shares of it, to the money resources which its payment brought into the business—i.e., to the money flowing to the Merchandise Manager and thence to the buyers—and subsequently to the goods into which the money was converted, "expiring" it as sales of goods were made, his doing so would have no apparent significance to any of the administrators. The item, as a *prospective* payment in the original planning stage, appeared only in the budget (estimated profit calculation) of the *highest authority*. It was the objective payment (at that time *prospective*) necessary to achieve the optimum (prospective) revenue. The marginal increment of revenue having been considered worth the cost of the marginal increment of money to be invested, the item in question became one whose expenditure was expected to be justified by the whole activity of the business in the forthcoming period as planned by the co-ordinated decision *ex ante*. The "efficiency" of the subordinate administrators remains to be tested, not by whether they contribute the money allotted to them plus an "attachment" of the item in question, but by whether they contribute the revenue which they offered.

Similar remarks apply to the contractual rent payment arising out of the earlier decision. To "attach" this item to the flow of things through the business would appear to have no administrative significance.

But this does not exhaust the matter. The accountant would, I presume, say that so far I have referred only to "fixed cost", or "overhead cost", or "oncost", or whatever he chooses to call the "interest" and "rent". There is still the outflow of money upon the purchase of stock to be dealt with. *A*, for example, will be spending his allotment of money. The accountant will see the outflow of money and the inflow of goods, and may wish to "attach" bits of the money

to bits of the goods, and "expire" the money in the manner indicated by Mr. Norris. His doing so appears again to have no administrative significance. *A* offered a certain revenue in return for being granted a certain allotment of money. It can be understood that an account should be kept of the actual allotment of money and the actual revenue, and used by the Merchandise Manager as a check upon *A*'s performance. And if *A* had offered to absorb the allotment of money and return the revenue at certain rates during the period, it can be understood that interim accounts should be kept with the same object. But *A* was not asked to disclose what goods he would buy with the money, or what prices he proposed to pay and charge for the goods: such matters were left within his administrative discretion. *A* was not asked to supply the Merchandise Manager with a budget in respect of each line of goods, although he prepared one for himself. If an *account* in respect of each line of goods were sent to the Merchandise Manager he would have no budget with which to compare it. The scope of accounting, as an administrative check upon *A*'s performance, appears to be limited to rendering an account in the same form as the budget approved by the Merchandise Manager. It is easy to construct simple cases to suggest the abortiveness, for this purpose, of further independent accounting.

Let us suppose, for example, that *A*'s mark-up on stock ranged between 20 per cent. and 40 per cent. on buying prices, and that he achieved his anticipations in all respects except one. In one line of goods he expected to make 40 per cent., but, after ordering the goods and before making any sales, decided that he had overestimated the selling market. In order to clear the stock, he put on a mark-up of only 30 per cent., and realised this. His failure will be shown by a shortfall in his actual revenue, in the account, below the anticipated revenue in his original budget. But this comparison will not show wherein his failure lay. Neither, apparently, will the pursuance by the accountant of the practice of "attaching" and "expiring" and linking divisions of revenue to the divisions of "cost", for obviously the 30 per cent. result, in the achievement of which the failure occurred, appears to be a better result than others, in the achievement of which no failure occurred. Only if *A* had submitted his corresponding budget, showing that the result ought to be 40 per cent., would the account have significance. It is easy, too, to construct simple cases to suggest that, if formal budgets were submitted for the purpose of making such comparisons, the accountant would, in his accounts, have to accommodate his methods of "attaching" and "expiring" to the discretion allowed by the firm's administrative arrangements, and not proceed with his own independent methods of "attaching" and "expiring". Suppose, for example, that *A*, acting within his administrative discretion, planned to buy 50 homogeneous raincoats for £50 and to sell 48 of them upstairs for 30s. each, and the other two in a bargain basement for 18s. each, and actually achieved the results

anticipated. Clearly, there is here one piece of business which is indivisible: one venture which has to be read as a whole. To "attach", for example, £2 to the two raincoats going to the bargain basement and £48 to the others, and to "expire" £48 against the sales upstairs, leaving £2 to be "expired" against the 36s. revenue in the bargain basement, showing a "loss" of 4s. in a separate account, would be meaningless if not misleading. It would certainly be misleading to suppose that accounts incorporating "attachments" and "expirings" according to independent methods of the kind indicated could operate as a criterion of *A*'s efficiency in exercising his discretion to budget and act as he did.

Nothing that I have said should be regarded as suggesting that no separate accounts should be kept of sales of separate products. Obviously, if *A* issues goods to salesmen—whom I assume here to have no discretion to vary the prices which *A* puts on the goods—he is likely to want reports upon which products are producing his incoming revenue: he will want to know whether particular goods are being sold at the rate he expected. The collection of this information does not, however, require any "attachment" and "expiring" of bits of money. Invoice analysis, or some other method, could yield the required information either in physical units of stock or in resale prices. For *A* to receive reports as to how the raincoats were selling, it would not be necessary to "attach" and "expire" bits of the amount of money spent on them.

There is still another matter. I have suggested that the extended independent accounting could not, in the circumstances, be regarded as having the function of being a report to the Merchandise Manager on *A*'s performance. Could it have the function of informing *A* what he ought to charge for the goods in stock? Could the "unexpired" bit of money "attached" to the bit of material be regarded as any criterion of what *A* ought to charge the public? The answer that the subjectivist must give is that it could not—emphatically not. To assume that it could would be to make an assumption which belongs to the category of "cost of production fallacies".¹ It must be added, again with emphasis, that the irrelevance of the "unexpired" bit of money for price-fixing does not depend in any way upon the accountant's method of "attaching" and "expiring". It is not a matter of petty illogicalities in particular methods. The irrelevance, and the "cost of production fallacy", lie in the very "attaching" itself. The money "attached" has already been spent. It appears only by the trick of "attaching". *A* has the goods, not the money "attached" to them.² The money "attached" is not a cost although the accountant gives it that name. The only cost which is significant for the purpose is the cost—in the subjectivist's sense—which occurs if a new

¹ I presume that Marx would have "expired" units of "labour" instead of units of money.

² "The value of what you have got is not affected by the value of what you have relinquished or forgone in order to get it. . . . You have the thing you bought, not the price you paid for it". Wicksteed, *op. cit.*, pp. 88-9.

decision happens to be made.¹ Under what circumstances *will* a new decision be made? Selling prices are tentatively planned *ex ante*, that is to say, before the goods are bought.² But it is likely that often, as time passes and the relatively obscure future approaches nearer to the present, the administrator will revise his appreciation of the selling market conditions, and consequently revise the selling prices that he had in mind when he bought the goods. One of the simple examples that I gave suggested as much. In that case, *A* decided that he had overestimated the selling market. He cut his expected selling price. The subjectivist argument is that the money spent on the goods has no relevance for fixing a limit to the extent of this cut. Is there then no limit, *on the cost side*, to the extent of the cut? The answer is that the limit has to be found in the contemporaneous and intertemporal opportunities which I have discussed elsewhere.³

The problem before *A* here would be whether he would be better off eventually by cutting the price at once and realising over a shorter period, or by hanging on for the higher price (and perhaps having to cut it eventually). This is not merely a question of choosing between two alternative total revenues; it involves also the question of money being available earlier or later—perhaps for reinvestment. The course of action (alternative opportunity) rejected by *A* would be his cost of taking the course which he chose.

In spite of this association of the practice of "attaching" and "expiring" with "cost of production fallacies", it cannot be pretended that in the modern world firms do not adopt, as part of their standing orders, the convention of assuming that the "bit of material" is to be regarded as having a cost equivalent in significance to the sum of money so "attached" to it—in spite also of Mr. Norris's contention that the "costs" are to be distinguished from values. It is well known that they do.⁴ Seeing this, the subjectivist, without question-

¹ This cost might be of higher or lower significance to *A* than an amount of money—if he had it—equal to the amount "attached" to the goods.

² I find that students under the accounting influence sometimes find it a little difficult to understand this, particularly if the goods are bought in one country and sold in another. I have taken to asking them the question "If this is not so—if there is no *ex ante* co-ordination of the buying and selling market—how does the buyer of a commodity know how much to buy? Is he indifferent as to whether he buys a collar-box full, enough to fill a fleet of ships, or a quantity given by a number drawn out of a hat?"

³ *Vide* "Permanent Resources", *op. cit.*

⁴ Some evidence, if any is needed, is contained in the following extract from an article by Mr. K. Lacey: "There are many . . . types of business (e.g., those producing proprietary lines), the selling prices of whose products lag very far behind the movement of raw material prices, and tend rather to be based upon the average cost of their stocks on hand. The profits of such businesses on the first-in-first-out basis do not vary quite so greatly over the Trade Cycle, and the adoption of the last-in-first-out basis might have the unusual effect in some instances of making their profits more unstable from year to year than they are at present. There is a fallacy here, however, and it must not be assumed that the earning of a reasonably stable profit is evidence that no self-deception exists and that no alteration in method is desirable. The position here is that sales are made at too low a price relative to replacement costs when market values are rising, and at too high a price relative to replacement costs when market values are falling". K. Lacey, "Commodity Stocks and the Trade Cycle", *Economica* (New Series), Vol. XI, No. 41, February, 1944. (Mr. Norris joined issue with Mr. Lacey in the following August issue of *Economica*.) This article is further welcome evidence that accountants are becoming concerned about the effects of accounting practice.

ing the business administrator's freedom to do what he liked (providing that he accepted responsibility for what he did, and the "automatic sanction" for error) would associate such firms with Wicksteed's business man whose "temper is expensive".¹ He might enlarge upon the dangers inherent in its practice to the firm itself,² and, where the practice was common to a large number of firms,³ or where the application of the "automatic sanction" was modified,⁴ to society. But this is not the place to raise these discussions.

APPENDIX

My discussion of "The Subjective Theory of Value and Accounting 'Cost'" is intended to throw out some suggestions which may not be immediately apparent on the face of it.

(1) If economics is to be useful to assist discussion of the problems of internal organisation of the firm and the explanation of the industrial structure and its weaknesses, the aspect of economics that should be developed is that which deals with people's behaviour when they are deciding what to do next with their resources. It is not sufficient, however, to assume that the decision-making is performed by individual people whose decisions are co-ordinated with those of other people *only through the medium of the market*. Within the "large-scale undertaking" decision-making is shared. Co-ordination occurs through other means than the market. The relationship between the buyer of factors and the seller of the product, for example, is *not* a *market* relationship. What is required from economics is the presentation of models showing how the decision-making might be split up (shared or delegated) and co-ordinated, together with models of "standing orders" determining the channels and timing of co-ordination. Energy might then be diverted from the impotent condemnation of monopolistic institutions to a critical examination of internal organisation with a view to discovering its weaknesses which, incidentally, lead to the formation of such monopolistic institutions.

(2) If accountants studied a theory of administration, working from the Subjective Theory of Value, through the co-ordinated decision *ex ante*, towards a set of theoretical models of administration charts, standing orders and budgets, they would discover that both the orientation of accounts and the methods of accounting ought to be accommodated to the particular administrative arrangements of the particular firm or organisation. Accounts would always be related to administrators' budgets and would always be of a form corresponding to those budgets, instead of being prepared independently of them.

¹ Wicksteed, *op. cit.*, p. 387.

² *Vide* twelve articles by R. H. Coase in Vol. XCIX of the *English Accountant*.

³ *Vide* Lacey, *op. cit.*

⁴ E.g., where there is compulsory cartellisation. On the association of cost-accounting with cartellisation, *vide* Burn, *Economic History of Steel Making* (Cambridge University Press 1940), pp. 494-5.

There would be no pretence that money was attached to things when it had already been spent, or contracted to be spent, upon those things. All the pseudo-problems of "allocating", "burdening" or "charging" would disappear.

The following comment is offered after a first reading of Mr. Harry Norris's article on "Profit: Accounting Theory and Economics" in the August issue of *ECONOMICA* :—

Mr. Norris states: "We accountants grant the attribute of objectivity to 'profit' if not to 'income'..." (p. 132). The difficulty of conceding that accountants are right in doing this will never be understood until it is recognised that the objective results upon which accountants work can be explained only by reference back to, and in the light of, the opinion of the decision-maker whose decision gave rise to those objective results. Out of his process of decision-making emerges the decision-maker's budget relating to the course of action which he decides to take. This may or may not be recorded. Such a budget, without an analysis of the opinion of the decision-maker attached to it, would not disclose the subjective acts of valuation which determined that his planned course of action was, in his opinion, the most advantageous or "profitable". For example, at a particular time, and in a particular situation, the budget might contain, on its "expenditure" side, merely an enumeration of diverse non-monetary resources, already in the ownership or control of the decision-maker, which he had decided to use for a particular job because he contemplated no better use for them. On the "revenue" side might be a sum of money which he expected to achieve by selling the results of the job. The expected "profitability" of the job would reside in his valuing his contemplated returns from this job higher than his contemplated returns from any (or the best) alternative use of his resources. This subjective valuation would not appear in the budget of anticipated objective results. Neither would it, nor ought it to, appear in the subsequent account of actual objective results. Autonomous accounting which, without reference to the decision-maker's opinion, but in order to make up an account of "profit" in monetary terms, subsequently introduced an assessment of "cost" into the record of objective results, would apparently be substituting (*ex post*) a simulated objective result for the decision-maker's subjective act of valuation (*ex ante*).

Mr. Norris perhaps makes his best approach to recognition of the link between the decision (and budget) and the objective results (and account) in his discussion of "fashion" goods on p. 130. His remarks might be compared with my own reference to homogeneous raincoats (above).

The Original Security Bank

By S. R. COPE

THE period of monetary difficulties and distress which preceded the suspension of cash payments by the Bank of England in February, 1797, provoked much discussion in the City and elsewhere of possible means of remedying what was termed "the shortage of circulating medium". Many schemes were put forward. Walter Boyd, senior partner in Boyd, Benfield & Co., formed a committee in April, 1796, under the chairmanship of Sir Stephen Lushington, and produced a plan which attracted some attention. Under this plan a board of twenty-five members was to be formed by Act of Parliament and was to issue promissory notes bearing interest at 1·8 per cent., payable at six months date and backed by gold, silver, Bank notes, or bills of exchange with not more than three months to run.¹ The plan was submitted to Pitt, who consulted the Bank of England. The Bank were, of course, opposed to any such plan and Pitt turned it down. The idea, however, was taken up by Sir John Sinclair, who suggested that the Bank of England should issue £2 and £3 notes. A month later, he suggested that £5 millions of 3 per cent. notes secured on 3 per cent. Government annuities should be put into circulation.² Nothing came of either suggestion.

In the autumn of 1796, Sinclair repeated his proposals in modified form, suggesting an increase in the capital of the Bank and the issue of notes payable at 12 months date as well as the issue of £2 and £3 notes payable on demand.³ The members of Boyd's committee had apparently been thinking on similar lines: the committee was re-constituted and put forward a fourfold plan, involving firstly, a funding of the large amount of unfunded Government debt; secondly, an increase in the capital of the Bank of England; thirdly, the discounting by the Bank, in addition to their normal discounts, of fair mercantile bills if covered by real estate, public funds or other securities pledged to the Bank; and fourthly, the passing of an Act of Parliament to authorise the formation of a company to which bankers in London and Westminster would mortgage "solid property" in return for which they would be allowed to issue notes, which would be legal tender, in discount of fair mercantile bills.⁴ The plan was similar to Sinclair's, but went further, the most important difference being that whereas Sinclair's plan was based entirely on the Bank of England,

¹ Boyd, W. *Letter to the Rt. Hon. W. Pitt* (1801), p. 97.

² Sinclair, Sir John. *History of the Public Revenue of Great Britain* (1803), Vol. II, p. 213.

³ Sinclair, Sir John. *Letters written to the Governor and Directors of the Bank of England in September, 1796* . . . (1797).

⁴ *Morning Chronicle*, 23rd September, 5th October, 21st October, 1796.

the committee envisaged a new statutory body as well. None of these plans was ever implemented. They were proposed, discussed, and for one reason or another, dropped. It was left to a small and un-influential group to launch a scheme which was essentially the same as those so enthusiastically canvassed during the preceding few months.

At the beginning of December, 1796, London newspapers carried the advertisement of a meeting held at the Crown and Anchor Tavern in the Strand to consider the formation of what the promoters called the Original Security Bank.¹ There were three promoters, John Casper Hartsinck, Julius Hutchinson and William Playfair, partners in the banking firm of Hartsinck & Co. They were not included amongst the recognised London bankers, nor were they shown in London directories as merchants. Possibly the firm was formed just for the purpose of launching the Original Security Bank. Little is known of Hartsinck; he was Minister Plenipotentiary of the United Provinces to Lower Saxony and the Hansa city of Bremen prior to the occupation of the Netherlands by the French² and he was at one time associated with the famous Amsterdam mercantile house of Hope & Co. Hutchinson was a clergyman. The most interesting of the trio was Playfair—inventor, company promoter and pamphleteer. Born in 1759, he served an engineering apprenticeship and in his twenties took out a number of patents which, however, were not commercially successful. He then went to Paris where he patented a rolling mill. In 1789 he became agent for the Scioto Company (a land company in Ohio), which by holding out to prospective settlers promises of good climate and fertile soil succeeded in selling 50,000 acres of land in two months. After some political activity in Paris he was forced to leave France. While at Frankfurt he learned of the newly invented semaphore telegraph and immediately made a model of it, which he sent to the Duke of York, claiming credit afterwards for having introduced the system into England. In 1793 he came to England and turned to writing as his main occupation, producing a large number of pamphlets on a wide range of subjects. He died in 1823.³ To a man like Playfair the idea of forming a note-issuing institution in London was no less practicable than that of selling thousands of acres of land (which, for all he knew, might never have existed) in Ohio.

At the meeting, the promoters explained their scheme. They argued on familiar lines. "The Public at large and Commercial men in particular have long felt that there was not a just proportion between the business done in this kingdom and the representative signs necessary for making payments . . . It is necessary then to discover a Representative Sign or Circulating Medium with which Payments may be made from Man to Man without interfering with the Bank Charter . . .

¹ *The Times*, 2nd December, 1796.

² *The Times*, 6th January, 1797.

³ *Gentleman's Magazine*, 1823, 1, p. 564.

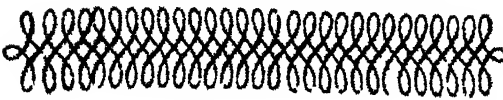
This Circulating Medium must be upon a foundation of indisputable solidarity." They accordingly proposed that an Original Security Bank should be formed to issue notes backed by Exchequer bills, Government debentures, India bonds "or any undoubted security". The notes were to bear interest at 2 per cent., and were to be repayable on the day following the day on which the underlying securities were redeemed.¹ The Original Security Bank was to be under the direction of six or twelve persons who would serve without remuneration, and the day-to-day business would be carried on by managers. After expenses had been paid "together with a sum to the promoters" (a most important provision!) profits would go to charity.²

The project, described by the *Morning Chronicle* as "ingenious", attracted relatively little attention, but the promoters went ahead and opened an office at 28, Norfolk Street, Strand. There is nothing to show that the six or twelve "directors" were ever appointed, and it seems that the bank was nothing more than Hartsinck & Co. under another name. An explanation of the purpose of the bank, and of the way in which it would operate, almost certainly written by Playfair, was published at the end of 1796. As was perhaps inevitable, Playfair attempted to provide theoretical justification for the scheme by asserting that if notes were adequately secured they could not be issued to excess—a fallacy which was to appear frequently in the currency discussions of the nineteenth century. "The quantity of paper circulating in a country," he wrote, "ought never to go beyond the property which is engaged for its payment; but so long as it remains within that limit, there cannot possibly be any danger". Once the principle was accepted, the rest was machinery. Under the scheme any holder of a Navy, Victualling or Exchequer bill, or other Government security, could deposit it with his own banker "in such a manner that it neither can be negotiated, sold, nor taken out of the deposit until the day of payment, when it will be delivered up to this Bank, in order to enable it to receive the amount of the Bill, and to pay the Notes which are created on its credit." The original was to be endorsed by the proprietor by a note addressed to the banker with whom it was deposited, instructing him to deliver the original to the Original Security Bank when it was due; up till then to hold it as security for the notes.³ Notes were to be issued in denominations of £5, £5 5s. od., £10, £15, £20 and £25. The plan represented an ingenious attempt to create confidence by providing for the deposit of securities with the note-holders' own bankers, instead of requiring them to be delivered direct to the Original Security Bank. Apart

¹ The lag of one day was to allow time for the proceeds of the underlying securities to be collected before the notes had to be paid.

² *The Times*, 2nd December, 1796.

³ *Plan of the Original Security Bank* (1796) pp. 5-6. A small point of difference was that under this latest plan the notes were to be repayable on the same day as that on which the underlying securities were repayable, instead of on the following day, as in the original plan.

	
ORIGINAL SECURITY BANK.	
No.	No.
£. 10 0 0	Portion of Baby Bill. No. London
<p><i>We Promise to pay to</i> <i>or Bearer the sum of Ten Pounds being a Portion of the</i> <i>Baby Bill No value</i> <i>One day after the Principal shall be paid</i></p>	
<p><i>security for the payment hereof</i> <i>which is duly deposited as</i> <i>day of</i> 17</p>	
£. Ten	
Endd. Folio	Countd. Folio This Bill carries two pr. Ct. Interest.

Note of the Original Security Bank—First Draft (Reproduced from *The Times*, 2nd December, 1796)

No. 

Original Security Bank, London.

No. 28, Norfolk-st., Strand, W.C.

179

£. 25 Portion of Exchange Bill, No. 2,707,

THE SAME DAY on which the above Exchange Bill shall be paid,

We promise to pay to

or Bearer,

Twenty-five Pounds, (with Interest, at the rate of Two per Cent. per

Annum) being a Portion of the above

Bill, No. 2,707,

value £1517 18 9 dated

due

which is duly deposited as Security for the Payment

hereof, with

Bearers

according to their Receipt in our hands.

Twenty-five.

HARTINCK & Co.

NB. The Interest amounts to 10s. per Month, and accrues when the Bill is cashed.

W. L. ALFRED MASON

from this feature, it was essentially the same as that put forward by Boyd's reconstituted committee in the previous October.

The Original Security Bank advertised its opening for business on 4th January, 1797, stating that the bank was "for the accommodation of such Gentlemen as are possessed of Government Securities, or those of the East India Company" and that the extension of the scheme to cover other securities would be advertised later.¹ Even the restricted basis gave the bank considerable scope. Exchequer bills yielded over 5 per cent., while a yield of 5.4 per cent. could be obtained from Consols, which stood at 55. The *Morning Chronicle*, in an article drawing attention to the heavy issues of Exchequer bills, suggested that the Original Security Bank should purchase "a Million of Exchequer Bills at least", pointing out, with a touch of sarcasm, that since the notes of the Original Security Bank paid only 2 per cent., whereas nearly 5½ per cent. could be obtained from Exchequer bills, "The profit is as obvious as the security is unquestionable"²

The suspension of cash payments by the Bank of England created an entirely fresh situation—one which Hartsinck & Co. tried to exploit immediately. They saw in the suspension a blow to the prestige of the Bank of England and an opportunity to gain publicity for the Original Security Bank. Within a week of the Mansion House meeting on 27th February at which hundreds of merchants and bankers resolved to accept Bank of England notes for all payments, the Original Security Bank published a notice stating that holders of Bank of England notes could if they wished exchange them for notes of the Original Security Bank! "The Intention of the Original Security Bank, in issuing Promissory Notes in exchange for those of the Bank of England, is to facilitate Public Convenience in the first instance. They intend to open Accounts with all Bankers in London who choose to do so, with whom they will place the English Bank Notes in the same way that any Individual lodges Money with his Banker." They admitted that this brought no profits to the Original Security Bank. ". . . as to ultimate Profit, they know not what it may be, as none of the Notes exchanged will be employed by them in any operation of Trade or Finance," but they professed altruistic motives ". . . their satisfaction will be derived from essentially serving the Public, and their Profit from what time and accident may ultimately produce"³ It was a publicity scheme, and as such had merits: unfortunately it is not known to what extent, if at all, holders of Bank notes accepted the offer. There could hardly have been many.

This sort of publicity was not likely to suit the Bank of England, ever jealous of any threat, however remote, to its position. Hartsinck & Co. had been careful to avoid infringing the Bank's monopoly of corporate note issue within a radius of 65 miles of London, by making

¹ *Morning Chronicle*, 4th January, 1797.

² *Morning Chronicle*, 2nd February, 1797.

³ *The Times*, 3rd March, 1797.

the notes of the Original Security Bank payable, not on demand, but at the expiry of a fixed period. The notes were originally payable in cash, which meant gold coin, but since the Bank had suspended redemption of its notes in gold coin, it was impossible for the Original Security Bank to continue to pay in cash. Hartsinck & Co. accordingly made the notes payable in Bank of England notes instead of in specie. This led to trouble at once. The Bank of England seized the opportunity to attack the new institution, and began legal proceedings on the grounds that the notes came under 13 Geo. III, c. 79, which made a felony the printing of any paper bearing the words "Bank of England". This was a little unfair, but Hartsinck & Co. countered successfully by announcing that the words "Notes of the Bank of England" would be replaced by "Bank Notes".¹

The suspension of cash payments seems to have given some assistance to the Original Security Bank and in May, Playfair in an open letter to Sir William Pulteney² claimed that the success of the bank was "great beyond expectation". This letter, which was written from Cornhill and dated 23rd May, 1797, was apparently occasioned by the discussions then in progress regarding the renewal of the Act authorising the Bank to withhold payment of its notes in specie. Pulteney, member for Shrewsbury, was one of the most outspoken critics of the Bank of England, and was advocating the formation of another public bank in London should the Bank of England not resume specie payments. In his pamphlet Playfair pointed out that it was impossible to found another bank on gold; another basis had to be found. Land was unsuitable in a commercial country; merchandise he considered suitable and he suggested that goods, merchandise and obligations of the state should serve as backing for the note issue of the new bank. He then mentioned his connexion with the Original Security Bank which, he said, wanted "not the protection but the friendly aid of government". He described the way the Original Security Bank could operate under a new arrangement, the chief feature of which was that the securities backing the note issue would be deposited in a public office under the control of a government official. The notes should be accepted in payment of taxes and duties, under discount, when they had not more than one month to run, and should be given some exemption from stamp duty. The object of Playfair's letter is clear. He was afraid that if Parliament accepted the principle of another note-issuing bank, a new institution might be formed which would compete with the Original Security Bank. "If serious intentions are entertained of parliamentary interference," he wrote, "I hope and trust that the easiest and fairest mode will be adopted, which is to make such regulations and grant such advantages to the Original Security Bank already established as will

¹ *Morning Chronicle*, 9th March, 1797.

² Playfair, W. *Letter to Sir Wm. Pulteney, Bart., M.P., on the Establishment of Another Public Bank in London* (1797).

render it universally useful by the easy and safe mode which I have suggested".¹

Whether impressed or not with Playfair's arguments, Pulteney, on 20th May, moved for leave to bring in a bill for the establishment of another bank, should the Bank of England not reopen for payment in specie on 24th June, 1797.² Sheridan, supporting the motion, cited the Original Security Bank as an example of the institution required and referred to it as "an institution that had already been productive of great conveniency . . . likely to be followed by many others on the same plan in different parts of the kingdom, and might perhaps form no inconsiderable æra in the history of exchange and commerce". But the Commons would have none of such schemes. Baring, Thornton and others spoke against the motion, which was defeated.³

The Original Security Bank lasted only another five months. In November, 1797, almost a year after it was first launched, came news that an arrangement was being made with its creditors,⁴ and a week or so after, the bankruptcy of Hartsinck & Co. was announced.⁵ Faced with the open hostility of the Bank of England and indifference on the part of the Government, and lacking the support of strong City interests, the Original Security Bank was bound to fail. Just how near to success it came cannot be judged. Certainly at few times since the Bank of England's foundation were there better chances of forming another note-issuing institution successfully. Playfair envisaged the notes of the Original Security Bank circulating freely from hand to hand and "applicable to the common course of payment".⁶ Whether, however, the public would have tolerated the inconvenience of interest-bearing notes in day to day transactions seems doubtful. Such notes might have had a more limited function as a means of holding funds in a form slightly less "liquid" than Bank notes, but more "liquid" than Exchequer bills: this, however, would have depended upon whether or not they had been generally accepted by merchants and bankers. Even this more limited function would have tended to weaken the control of the money market by the Bank of England. In the retrospect, the Bank's concern for its note-issuing monopoly, selfish as it might have seemed, probably worked out for the benefit of the credit system of the whole country. If so, the inglorious failure of the Original Security Bank is not wholly to be deplored.

¹ Playfair, *op. cit.*, p. 26.

² *Commons Journals*, Vol. LII, p. 623.

³ *Annual Register*, 1797, "History of Europe", p. 204.

⁴ *Morning Chronicle*, 2nd November, 1797.

⁵ *London Gazette*, 14th-18th November, 1797. Two dividends were paid and within a year Hartsinck got his discharge.

⁶ *Plan of the Original Security Bank* (1796), p. 3.

Book Reviews

Prix, Monnaie et Production. By ROBERT MARJOLIN. Alcan Presses Universitaires de France, Paris. 1941. x + 370 pp. Fr. 20.

This work is described as an Essay on Long-period Economic Movements, but its underlying purpose would seem to be to use that topic as an illustration of Economic Method.

Dr. Marjolin's contention is that the explanation of any economic phenomenon must proceed by way of verification of a hypothesis, and that the hypothesis must be *comprehensive*. The economist has not the advantage, enjoyed by the physicist, of isolating the phenomena he is investigating by a planned experiment. He has to accept an observed portion of real life, and cannot afford to disregard anything which may have affected it.

Dr. Marjolin accordingly feels bound to approach his subject through a general survey of present-day economic theory, from which he derives the material for constructing the hypothesis to account for long-period economic movements. This general survey takes up nearly a third of the whole book.

The survey is well done: clear and well balanced. But in the end it can hardly be said to supply him with a better apparatus for his purpose than Jevons handled when he first called attention to the effect of the gold discoveries of 1849-51 in raising the price level.

The movements to be explained are essentially fluctuations of the *price level*. Incidentally, there are fluctuations of activity and of other economic quantities. A long-period price fall is marked by a prolongation of the downward phase and a shortening of the upward phase of the cycles comprised within it; a long-period price rise by the contrary. But the price level is the essential factor, and Dr. Marjolin contends that, given a free metallic standard, the fluctuations must depend on fluctuations of the supply of the monetary metals.

Modern economic theory supplies him with a more detailed analysis than Jevons ever used. Price movements, he shows (p. 37), are due to fluctuations of demand expressed in money, and demand to the total of incomes so expressed. That total is composed of the incomes of the different agents of production, workmen, rentiers, landowners, entrepreneurs, and varies as entrepreneurs decide to produce more or less. "To produce, the entrepreneurs need advances of money, either short-term bank advances, or long-term advances, generally obtained by the issue of securities. The monetary income of a community depends therefore on its investments understood in a broad sense, that is to say, the immobilisation of monetary capital in enterprise."

The price level rises, he infers, when the rate of interest is below the marginal productivity of capital, and falls when the rate of interest

is above it. But the rate of interest itself has to be adjusted to the monetary position. The banks cannot afford to let credit expand out of proportion to the supply of currency, and Dr. Marjolin insists that the effect of fluctuations in the supply of the monetary metal cannot be counteracted by contrary fluctuations in the supply of credit.

All this is good nineteenth century doctrine. And where Dr. Marjolin parts company from the nineteenth century, he is, I think, following contemporary economic theory on to very doubtful ground. By the marginal productivity of capital he means the additional *profit* obtainable from an increment of capital (pp. 31-2). If, for instance, the entrepreneur expects a rise or fall in the price of his product, that will mean a higher or lower marginal productivity of capital (p. 34).

There is here a confusion of thought, and one which unfortunately has infected much of the economic doctrine of the present day. Interest is a *cost*, and the marginal yield of capital with which it has to be compared is not the profit on the ultimate product, but the cost-saving capacity of the marginal appliance. In a later passage (pp. 290-1) Dr. Marjolin reverts to this view, and offers an exposition in entire accord with Marshall.

All these controversies do not seriously interfere with his reasoning about the long-period fluctuations. But he rather unnecessarily brings into his analysis, along with the monetary effects of an increase in the gold supply, the direct effect of increased investment in gold-mining upon the marginal productivity of capital. Surely, even if he did not see fit to disregard this as negligible in relative magnitude, he might legitimately have presumed that new openings for capital enterprise in the aggregate will not necessarily be any the greater when they include an expansion of gold mining, than when they do not.

From his preliminary theoretical analysis of the long-period fluctuations, he proceeds to a historical and statistical verification. Here he deals with some alternative explanations.

He finds no correspondence between the economic fluctuations and the amount of new inventions characterising the successive periods.

Wars or revolutions may appear to be the immediate cause of an economic fluctuation. Dr. Marjolin quotes Kondratieff's view that an increase of tension in the economic sphere is itself a cause of war or of social unrest (p. 282), and he refers to the fact (noted by Mr. A. L. Macfie) that for a century and a half nearly all wars have broken out in the periods of long-term rising prices (p. 283). His comment is that even if there is some such connection between war and economic fluctuations, the connection is not close enough to determine the actual moment of the turning point (p. 286).

I venture to suggest that the true explanation of the connection is not that economic tension causes war or revolution, for surely "tension" is greater at times of prolonged depression than of prolonged activity, but that the wars have contributed to *cause* the long-period fluctuations. The falling price level of the years 1815-49 was in part due to the

absorption of the precious metals by countries which had been driven under war conditions to use paper money, and a similar process was at work in the period following 1871. The absorption of the precious metals caused severe depression, and was followed by no corresponding release. That does not mean that the fluctuations in the output of the precious metals counted for nothing. The big increases that recurred after the Australian and Californian discoveries, and after the development of the South African mines, undoubtedly had very marked effects on the monetary affairs of the world. But it is not established that in the intervals the output of gold ever became so deficient as itself to account for the decline of the price level. In fact Dr. Marjolin assumes much too readily that his period is one of unimpaired metallic currency systems; his hypothesis does not pass his own test of comprehensiveness.

R. G. HAWTREY.

Economic Reconstruction. Edited by SEYMOUR E. HARRIS. McGraw-Hill Book Co., Inc., New York. 1945. xii + 424 pp. \$3.75.

This is a collection of twenty-three papers by as many different authors on various problems of post-war economic reconstruction in the U.S.A. The contributors are among the leading authorities in their respective fields; they include Professors Black, Clark, Ellis, Hansen, Haberler, Harris, Mason, Sweezy, Drs. Ezekiel, Colm, Mosak and Livingston and other household names. The general level of discussion is accordingly high.

Although a wide range of subjects is covered, one central topic stands out: "If there is a leading theme in this volume it is this: a substantial decline of spending cannot be tolerated, and, when it has occurred, corrective measures must quickly be taken. There are few, if any, chapters in this volume that do not deal with this problem . . ." (p. 4). If anything, this quotation understates the emphasis on this subject throughout the book. The lectures on which the book is largely based were given at Harvard in 1944, and they suggest that by then (only eight years after the publication of the *General Theory*) the theory of effective demand had become orthodox academic doctrine in America. Incidentally, there is not a single acknowledgment to the Keynesian theory of effective demand in this book whose ideas are so largely derived from it. It is noteworthy that although apparently all the contributors appreciate the necessity for positive government action for the maintenance of a reasonably high level of activity and employment, they are nevertheless supporters of a private enterprise economy. Thus, different inferences seem to have been drawn from the *General Theory* in America and in this country.

Quantitative aspects of output, employment and demand are reviewed in the first two parts of the book. Those who do not normally see the publications of the Department of Commerce

or of the Federal Reserve Board will find here convenient summaries of the relevant orders of magnitude, with many references to more detailed studies. The phenomenal productive capacity of the U.S. economy and the formidable problem of the maintenance of post-war demand are well brought out. Both in its analysis and presentation, Dr. Mosak's chapter on forecasting post-war demand is particularly illuminating, and the magnitude of the problem of maintaining full employment in post-war America emerges well from his austere and formal paragraphs. The huge increase in industrial output since 1939, discussed by Dr. Ezekiel, is, of course, familiar, but the great expansion in agricultural production during the war, with a substantial reduction in agricultural employment, may surprise some readers. Professor Harris deals with wages, employment and earnings during and after the war, and reviews briefly the contribution to the increase in payrolls since 1939 of higher wages, longer hours, more employment and overtime. Some post-war labour problems are also discussed, but there is an important omission, not made good anywhere in the book, in the failure to consider the problem of monetary stability under conditions of full employment and largely unionised labour. The activities of the farm bloc and of organised labour may well endanger the purchasing power of the dollar at a high level of employment, and while the problem may not be insoluble, absence of its discussion is a serious shortcoming in a book devoted so largely to the maintenance of effective demand and of full employment. There is considerable overlapping between several chapters in Parts I and II which was probably unavoidable, but there are also a few puzzling discrepancies between the factual data, e.g., between the figures of the mid-1944 labour force as given on pp. 98, 101 and 147. Again, while estimates of future demand must be expected to diverge, some clarification of the assumptions is called for to explain such a wide discrepancy as that between Professor Harris's and Dr. Kaplan's estimates of deferred demand (pp. 5 and 145).

There are some penetrating hints in Professor J. M. Clark's short chapter on controls during the transition period; it seems the best of the papers devoted to this subject (Part III). The divergence between what is deemed desirable by a distinguished academic economist and what is practical politics in America is shown in this sentence: "Rationing of food will probably be needed for one year after V.E. day if we do what should be done to meet the needs of war-torn Europe". In the chapter on international commodity controls by Professor Mason, an account of the recent change in the official American attitude towards commodity regulation would have been welcome.

Part IV reviews competently some of the principal problems of internal American monetary policy and public finance. There are some informative and well presented statistics in this part, especially in the chapters on fiscal policy (Colm) and on post-war financing of

business (Livingston). The chapter on the post-war tax structure, in which there are many interesting hints on problems of American public finance, contains a summary of the principal issues of current controversy on American taxation. The author (Dr. Blough) refrains, however, from taking sides, and his attitude is very much that of "while on the one hand, nevertheless on the other".

Professor Haberler's paper on the future of international trade stands out in Part V on international economics. Except perhaps among whole-hearted supporters of strict government control over the national economy, there will be ready acceptance of his views on the benefits still to be derived from international trade, and on the feasibility of conducting multilateral trade in the future, given a measure of goodwill and skill in its management. There will also be many to agree with his criticisms of the vocal advocates in this country of rigid control of foreign trade. But Professor Haberler much weakens his case by his failure to give adequate consideration to the views he criticises, and also by his apparent reluctance to allow fully for the difficulties in the path of a multilateral trade policy. His strictures on *The Economist* on the basis of some extracts given on pages 326-327 of the book are misplaced. Professor Haberler charges the author of the article with ignorance of elementary economic principles; it seems, however, from the quotations that what the writer had in mind was a persistent American export surplus, without steps being taken to correct this by appreciating the dollar, raising internal prices or reducing the tariff. Professor Haberler regards exports as a means to secure imports, but wide sections of the American public think of them principally as a means to export unemployment. Nor is this view confined to the non-academic world, since Professor Mason writes in the book under review (p. 231): "The maintenance of a high level of domestic employment is significantly dependent on our finding export markets for an increasing volume of industrial products". Much the same opinion is expressed by Professor Bernstein (p. 337): "If our exports of goods and services could reach \$10 billion a year during the post-war decade, it would mean nearly 3 million jobs in industry and a foreign market for the agricultural output of about 1 million people". The qualifications and wartime service of Professors Mason and Bernstein (listed in the contributors' who's who on p. xii) lend special interest, or rather emphasis, to this opinion. There is also ground for considerable criticism of Professor Haberler's acceptance of the traditional view that the elasticity of international demand of all the larger industrial countries is likely to be great. In 1941 the five most valuable American imports were rubber, wool, sugar, coffee and tin. Is there much doubt that the demand for these was inelastic over the normal range of prices? Similarly for some British imports of foodstuffs in the 1930's when this country took over three-quarters of world exports of some of those commodities. The American tariff and the instability of the U.S. economy are now used in this country

as a stick with which to beat multilateral trade and indeed any modest attempt to liberalise international trade. But little is to be gained, particularly in academic discussion, from a refusal to recognise the magnitude of the problem they present.

There is no reference in the book to the actual level of the American tariff, and very little is said of the prospects of its revision, upwards or downwards. In an interesting chapter on the revival of international lending, Professor Upgren has one paragraph (on p. 364) on the prospects of American commercial policy. After stating that trade restrictions should be modified "slowly and steadily" to permit debtors to sell in America, the author thinks that "Perhaps the greatest hope here lies in the fact that foreign lending and its desirability in specific instances will be the subject of discussion and review by an international agency. It . . . can be expected to see to it that necessary changes in commercial policy are suggested and are, in fact, actually made . . ." Though this consideration ought not to be dismissed as negligible, it would be rash to expect much from it.

In Part VI Professor E. M. Burns suggests some much-needed improvements in the American social insurance system but is sceptical of the prospects of their acceptance. There is a short but instructive discussion of the difficulties of applying a flat rate benefit system under American conditions with great variations in standards of living. Moreover, "labor in the U.S. is strongly individualistic and appears to attach as much importance as other groups to the maintenance of income differentials, including their reflection in social security payments". Political and administrative obstacles to an extension of the American social insurance system are also reviewed.

As has already been said, there is a large measure of agreement among the contributors in their support of a private enterprise economy with limited government intervention in peace time, chiefly in the maintenance of effective demand. There are, however, notable differences of opinion on the wisdom and breadth of view to be expected from Congress and from American public opinion. Some of the writers assume that the policies they record as desirable will meet with little political resistance while others are quite sceptical about the political acceptability of the same measures. Professor Black and Dr. Hyson in their chapter on post-war agriculture take for granted a large measure of successful lobbying by the farm bloc, and regard this as a datum to which their recommendations must be adjusted. Several other contributors, among them Dr. Ezekiel, seem to assume a remarkable degree of enlightenment on the part of Congress, business and public opinion. Professor Haberler is also of this opinion (p. 327): "The lack of synchronisation of policy and public opinion in the field of international trade in the United States and England is deplorable. When American industry and public opinion become ready to apply the elementary principles of trade, important circles in Great Britain seem to have all but forgotten them . . ." It is possible to agree

with him in deploring the growth of illiberal ideas in this country without sharing his optimism on the trend of public opinion in America. After all, American economists have generally been free traders, but their influence on policy has not been conspicuous. For several years now there has been full employment in America, with a world shortage of most industrial and agricultural commodities. The prevailing climate of opinion among business men, and organised labour, in agriculture and in Congress, is not a reliable guide to post-war trends. Actually, there have been recent moves by business and by organised labour for a restriction of imports. Professor Haberler's optimism would be more convincing if he had allowed for these considerations. Professor Burns's and Dr. Blough's assessment of American, especially Congressional, opinion appears more congenial. They expect substantial and often successful opposition even to the most desirable policies, but attribute this not only to the selfishness of pressure groups, but also to the lack of understanding of the issues involved.

Reading this book, one cannot help regretting that no similar work has been published in this country, or can be expected in the near future. Yet this should not be altogether impossible, in spite of the much more rigid restrictions here on the temporary civil servants. Though little or nothing in this book seems to have been based on unpublished official material, some of the best sections are quite clearly the work of analytical minds familiar with practical administration and political problems. The temporary entry into government service of so many economists during this war has been the first instance on any scale in this country of the movement of academic economists between the universities and government service, which in America has been a fairly regular feature for some years past. It would seem desirable that the lessons learnt should be widely disseminated.

P. T. BAUER.

Wage Determination Under Trade Unions. By JOHN T. DUNLOP. Macmillan Company, New York. 1944. ix + 228 pages. \$3.50.

This book deals with a subject which is not only academically interesting, but also vital to our present situation and future plans. Wage theory is far from satisfactory, and as the author says, "despite the tremendous expansion in collective bargaining in recent years, systematic enquiry has scarcely begun to explore in analytical terms, or through detailed empirical investigation, the luxuriant field of wage determination under collective bargaining".

The first part of the book deals with the title-matter proper, and the second with wage changes, and variations in labour's share of the National Income over the trade cycle. The author begins by pointing out that the technical organisation of a market is not neutral in its effects on price results, and should therefore be treated from the

beginning as an independent factor. The labour market is a "quoted-price" market, the price being quoted by the buyer. This, combined with the fact that "the time-pattern of adjustments" is long, explains why wage rates are stable even without trade unions, although day-to-day changes in demand are a common feature of the labour market. He then emphasises the importance of taking a "multi-dimensional view of sales agreements", the importance of "non-pecuniary structures" in complex labour bargains, and the difficulty of measuring the price of labour in a single base-rate; in particular, wage rates should not be identified with average hourly earnings.

All this would seem to emphasise the dangers of embarking on oversimplified generalisations too quickly, and the need for prior description and empirical investigation. However, in Chapter III Mr. Dunlop constructs an economic model of a trade union. In spite of much profession of a revolutionary spirit he draws a traditional demand-curve for the trade-union labour, just mentioning that "the precision of the concept is not so great as is ordinarily supposed", but giving no hint as to its exact defects. Apart from the logic of the matter, the "usefulness" of a price-demand schedule has already been questioned in view of the complexity of labour bargains, and the importance of non-pecuniary elements in influencing the quantity demanded. In place of the traditional supply curve of labour a "wage-membership-function" is drawn, "showing the total amount of labour that will be attached to the labour organisation at each wage-rate". The wage-results following from different wage policies of the trade union are then examined. Probably the maximisation of the wage-bill for the total membership is the most likely objective, though no empirical study was made of this surely important problem. This model seemed to this reviewer to contain too many hidden and unexplained assumptions to be acceptable without further elucidation.

The next chapter discusses the ways in which wage-policy may be used for "non-pecuniary" objectives. Problems common to every union are enumerated, including the problem of whether differential rates be set, or not, between high-cost and low-cost firms, and of estimating the result of a pressure for higher wages on employment. This is, of course, the central problem for trade unions as conceived by economists, and Mr. Dunlop gives some interesting examples of the recognition of the relation between employment and wages by trade unions. Wage-rigidity over the trade cycle is accounted for by the fact that the "time-pattern of impact responses" is long, which means that better times would be on the way in any case before the union had reaped the reward from the cut in the depression, and because it is the employed rather than the unemployed who determine wage-policy (the need for finding out the objective of trade unions is obvious here). A measure of bargaining power is introduced and the effects of different degrees of competition in the product and allied factor markets on the bargaining power of a factor are then

analysed. Much stress is laid on the need to "spotlight competitive conditions in a cluster of related markets". Mr. Dunlop puts forward what is called a "formal protest against the normal techniques of particular equilibrium as an explanation of price determination". Despite this "formal protest", I cannot see that there is much originality here, but some interesting examples are given of trade union activity in the product and related markets.

This half of the book is disappointing. The style in which it is written is neither simple nor direct, and with the difficulty of reading it at length some of the meaning may be lost. One feels that one has picked up much which is of incidental interest without having grasped fully its significance to the problems in hand. However, it contains some interesting passages, and perhaps the feeling of disappointment arises from the unfulfilled hopes which are often held out. The interesting parts have somehow failed to add up to a satisfying and integrated whole.

The second half of the book opens with a chapter on wage variations in the trade cycle. N.I.C.B. data of average hourly earnings were studied for the years 1929 to '33, and '37 to '39 (years in which reductions were taking place) and industries arranged in the order of the time of wage reductions. The pattern for '37 to '39 is very similar to that of the initial stages of '29 to '33. The depression being shorter none of the industries which reduced wages after April, 1931, are included in the later recession. On these figures the hypothesis is suggested that there is a typical pattern of wage reductions, which reveals the fact that "wage declines appeared first in the sectors of the economy with product markets usually regarded as the most competitive", and where the proportion of labour costs to total costs are relatively high. The figures for 1933 to '34 and '36 to '37 suggest that "industries in which wages decline first are apt to be the last to secure advances". The interesting conclusion emerges that it is the competitive character of the product market, rather than the degree of unionisation, which is the controlling factor. It is noticed that wage-reductions appear both in the investment goods sector where they can do most good, and where unemployment is greatest. Mr. Dunlop then examines the cyclical variation of labour's share in the National Income, and finds that the share of labour increases in a depression, where income equals net income produced, including Government produced income, and that increase is the more marked if salaries are included in wages. Kalecki found labour's share fairly constant over the trade cycle. He used Kuznets's gross income concept (from the private sector alone), and the use of gross rather than net income reduces the rate of increase of the share in the depression because depreciation allowances are fairly constant over the cycle. Breaking down Kalecki's over-all share figures, Mr. Dunlop finds that "the stability that Kalecki finds in the total share does not seem to reside in the individual series". Kalecki's data show little rise in the share in '31 and '32 because those

industries in which labour's share increased became considerably less important, while industries in which labour's share fell slightly increased substantially in importance. Had Government wages and income been included the total share of labour would have risen. "Basically, labour's share in total costs and income produced rises markedly in depression in many sectors of the system, characteristically those sectors in which output falls most." "Kalecki's pre-occupation with the total share has neglected the significance of individual weight changes". And "weight shifts constitute the cyclical process". The factors determining changes in the share of labour in individual industries are then examined.

The book closes with some general remarks on the inadequacy of a free pricing mechanism in the labour market, but ends with the warning that trade unions are a more powerful tool for good, or evil. This second part of the book is most interesting, and adds up to a clear and impressive whole on its own account, built on a firm empirical basis.

JEAN ROXBURGH.

Statistical Year Book, 1942-44. League of Nations. George Allen & Unwin, Ltd. 1945. 315 pp. 10s.

The League of Nations has maintained publication of its well-known Statistical Year Book even during the war years. The issue for 1941-42 appeared in the autumn of 1943. The number intended for publication towards the end of 1944 was postponed because of increasing difficulties during the war, but, on the termination of hostilities in Europe, it was found possible to prepare and issue the volume under review. Most statistical series have been brought up to 1943, though often with estimates, and some data for 1944 have been incorporated. The volume represents something of a triumph in the way of surmounting obstacles.

The present issue has expanded in a number of directions from the previous (1941-42) publication. It includes a valuable collection of national income estimates for eight countries, including the U.S.A., U.K., and the four Dominions. The population section has been enlarged and improved in many ways with the object of showing up more clearly the underlying demographic trends and the war-time disturbances which are still working themselves out. An objective account is included of the changes in area and population of various regions which result from the war, and this is a unique source of reference. The League has had here the assistance of private organisations, including the Population Investigation Committee in the U.K.

Though the economic and financial sections are somewhat improved in comparison with the 1941-42 issue, they remain inevitably and sadly deficient when measured against the pre-war coverage. Production data for many commodities are missing, e.g., beer, alcohol, paper,

motor-cars, merchant vessels. The old sections on wages and hours, on stocks and on transport have almost completely disappeared.

The volume, despite its gaps, is still an indispensable collection of international statistics. Pre-war figures are given in every section, and the war-time data are sufficiently full to permit at least a first assessment of the effect of the war on the demographic and economic position of the various countries.

R. G. D. ALLEN.

Studies in Income and Wealth (Volume VI). By the CONFERENCE ON RESEARCH IN INCOME AND WEALTH. National Bureau of Economic Research, New York. 1943. xiii + 283 pp. \$3.00.

National Product in Wartime. by SIMON KUZNETS. National Bureau of Economic Research, New York. 1945. x + 156 pp. \$2.00.

The state of American statistics, both the abundance of data collected and the readiness with which details are disclosed and interpreted, make it feasible to carry the discussion of subjects connected with the national income further than is possible in this country. At the same time, however, the discussion becomes increasingly technical, without any general agreement on fundamental concepts or approaches. In this country the close relation of economic theory and the concept of the national income (or perhaps our implicit belief in the British income tax) has resulted in considerable agreement as to the measurement of the national income; moreover, broad conclusions have been reached on the formal incidence of taxation and the place of taxes in the social accounts, conclusions still lacking on the other side of the Atlantic.

That this is the American position is evident from the sixth volume of *Studies in Income and Wealth*, containing seven papers, with discussions on four of them. The papers take different places in the wide range between pure theory and statistical estimation. The constant jump from theory to estimation, from exposition to criticism, not only from paper to paper but also within most of the papers, makes reading difficult. That sometimes the discussion of minor subjects should start from first principles, ignoring the fundamental writings of Pigou or Hicks, is due to the lack of common background.

J. Lindeman's paper on "Income Measurement as Affected by Government Operations" throws no new light on the ground covered by Professor Hicks in this journal in 1940. R. W. Goldsmith in "Measuring the Economic Impact of Armament Expenditures" makes a useful distinction between the current and the capital impact. He attempts to substitute the opportunity cost of armament expenditures for actual outlay. But his concept of impact is a purely formal one, ignoring the effect of armament expenditures on activity, and the effect of war which results in the forgoing of normal capital

accumulation, or the long-run effects on productivity. E. W. Grove in "The Concept of Income Parity for Agriculture" discusses an American problem which is also a world problem. He traces the differences between the concepts of price parity and income parity, concepts similar to commodity terms of trade and factor terms of trade. But he relates even the latter concept to some base year instead of striving for an absolute equilibrium. The requirement of economic equilibrium is, it seems, the equality of marginal net output in agriculture and industry, allowing for differences in capital equipment per head and in the subjective Marshallian "net advantages" of an occupation. The statistical problem, not yet tackled, is that we have to measure marginal and not average net output. In the discussion of the paper A. G. Hart rightly emphasised that the problem was created by the monopolistic position of industry as against agriculture. But in pre-war America income parity between farm and non-farm would have also involved a different distribution of unemployment between farm and non-farm (though total unemployment might have diminished). R. Bennett in "Significance of International Transactions in National Income" clarifies some concepts but then goes on to estimate some Keynesian constants with rather primitive methods. In particular, he ignores changes in the schedule of consumption through time, or changes in imports due to the tariff. Not more refined methods are used by F. L. Thomsen and P. H. Bollinger in describing the Department of Agriculture's national income forecasts. The assumption of linear regression curves is perhaps sanguine, considering how far they had to extrapolate during the war. H. E. Klarman introduces a novel statistical method in analysing income differences among communities. He is able to establish that (for homogeneous groups) differences in income are associated with city size and not with region. This is partly explained by the concentration of better-paid occupations in large towns. No doubt we shall see this inquiry carried further. In the last paper W. D. Hance gives a critical summary of estimates of capital formation. His very interesting study presupposes the existence of detailed estimates which do not exist here; neither can one assume that accounting or taxation practices are the same in this country.

Simon Kuznets, in his latest book, seems to absorb all the advantages of American statistics without becoming entangled in complications. He first gives a rounded-off discussion of the concept of national income particularly suited for wartime, and then, having chosen a concept, proceeds to prepare his estimates. He decides in favour of a concept very similar to that implied in the British official estimates (except that in the net concept he allows for the depreciation of war construction). Kuznets considers the net national product a better concept in peacetime or for long-run purposes, but the gross product (though less uniquely definable) in wartime because in the short-run amortisation quotas can be arbitrarily utilised. Yet the experience of this country

has shown that for war purposes stocks of commodities and foreign assets can be depleted, as well as fixed capital not replaced. Perhaps what is required is the measurement of net product, plus some information on that part of the national capital which can be liquidated in the short run.

The conversion of estimates at current prices into constant prices presents, in wartime, exceptional difficulties. Allowance has to be made, first, for the fact that some of the apparent increase in productivity in war industries is due to the introduction of mass production and not to genuine technical advance, and secondly, that owing to constant changes of models and for other obvious reasons, the utilisation of real resources is less efficient in war than in civilian industries. Making various assumptions, the net national product increased between 1939 and 1943 by 49-91 per cent, and the gross product by 49-86 per cent. (The upper limits are obtained without allowances for the two factors mentioned.) The share of war output rose from 2-3 per cent in 1940 to 38-54 per cent in 1943, according to the various assumptions. Unlike in this country, 84-91 per cent of the increase in war output between 1939 and 1943 came from an increase in total output.

The last part of the book gives a very interesting comparison of experiences during the two world wars. In World War II output rose by 3 per cent per quarter, both in the neutrality and in the belligerency periods. In World War I it rose only by 1 per cent per quarter during neutrality and slightly declined during belligerency, making the average increase only 0.5 per cent per quarter. At the peak of World War I the share of war output in the national product was only half of the 1943 figure. Also, prices rose much more sharply in the first than in the second war. These differences were due partly to better preparation in the last war but also to the vast extent of unused resources in 1939. Between 1929 and 1939 output per head of population actually fell, and unemployment amounted in 1939 to over 10 million, as against 3 million in 1914. It was still 4 million in 1941 but only 1 million in 1916. Another source of potential increase was hidden in the short pre-war working hours which were (in manufacturing) 38 in 1939 as against 51 in 1914. These factors, vast unemployment and short working hours before the war, also explain why American output rose so much more than British output during the last war. One would only wish that similar estimates were available for other countries.

T. BARNA.

International Investment and Domestic Welfare. By NORMAN S. BUCHANAN. Henry Holt and Company, New York. 1945. 249 pp. \$2.75.

Professor Buchanan appears to have written this book largely in order to dispel the exaggerated ideas, very prevalent at one time on the other side of the Atlantic, about the part that overseas investment

is likely to play in maintaining United States national income at a level adequate to avoid the return of heavy unemployment. By a somewhat elaborate examination of the physical form of United States capital assets, he shows how large a part consists of goods that have to be constructed on the spot, and how relatively small a part of goods that might be imported. From this he argues that the bulk of reconstruction goods that devastated and under-maintained countries will need to import will be wage goods rather than capital goods, and that a given amount of American foreign investment will therefore have a much less stimulating effect on United States capital goods industries than a corresponding amount of investment at home. He then attempts to estimate (and, since he was writing mainly in 1944, inevitably underestimates) the amount of physical damage to be made good in war-devastated countries. He also estimates the amount of liquid resources that they will have available to meet their exceptional import requirements. As among these he includes not only dollar, but also sterling, balances, he naturally obtains a very large figure. (Since in the short section devoted to the special difficulties of Great Britain he advocates some form of special assistance, he is perhaps assuming some scheme for making sterling balances convertible into dollars.)

After thus minimising foreign requirements for United States assistance, Professor Buchanan turns to stronger ground with an examination of the problem of payment of interest and principal on American foreign loans. He stresses the difficulty of such a country as the United States turning rapidly from an excess of exports to an excess of imports, and rightly emphasises the differences between the British position in the nineteenth century and the American in the twentieth. Very few people on this side of the Atlantic will disagree with his final conclusion—that the more of the dollars the rest of the world needs that can be obtained by exports to America (including exports of raw materials for stock-piling), and the less that have to be borrowed, the better. He therefore urges that the United States tariff be reduced as far as possible as soon as possible. An immediate reduction would cause much less impact disturbance than one imposed later on; and by reducing the amount of foreign indebtedness that will have to be incurred it would reduce the size of the import surplus ultimately required to establish equilibrium. It is to be hoped that the United States delegates to the proposed international conference will have read some parts at least of this book.

F. W. PAISH.

Our Economic Problem. By P. A. WADIA and K. T. MERCHANT. New Book Company, Bombay. 1943. 529 pp. Rs. 6-8.

The authors of *Our Economic Problem* have set out to analyse India's economic problems from the point of view of the standard of life of

the masses, and attempt throughout to treat these problems in the context of world economic forces and tendencies. This volume deals with various aspects of production, distribution and consumption, and a further volume is contemplated to deal with trade and transport, currency, banking and finance.

The authors have performed a signal service by bringing together, in concise form, a mass of facts and figures from official and unofficial sources. They fully recognise the urgent need for fuller information and improved records, but rightly judge that only the Government is in a position to plan and collect the necessary statistics. They therefore aim at making the best use of the material that is available, and interpret this in a careful and sensible manner. In view of their references, on various occasions, to supposed differences of opinions between myself and themselves, I was astonished to discover to how great an extent I agree with their conclusions and recommendations. They plead in general, and in specific instances, for social control and a plan of economic development involving a substantial and rapid increase in industrial activity, in the form of both large- and small-scale industries of many descriptions. I fully agree and consider that, given a "plan", rapid industrialisation is feasible and, if combined with social and economic improvements in other spheres, might well result in a substantial improvement in the general standard of life. Why was it, I asked myself, that the authors expected other views from myself? The answer is that the experiences and developments of world war the second have brought about such rapid changes and such a fundamentally different economic situation, that an opportunity has thereby been created for a break with the past and for an economic reconstruction on a scale that would otherwise have been inconceivable. The revolution in India's external debt relationships alone is sufficient to alter the whole problem of capital investment within the country in the near future. During the war forced saving has been inflicted upon India to an extent that would have been quite impossible during peace time. No doubt this has been achieved at the expense of the masses, but the fact remains that there are now large funds available for investment in industrial plant and equipment, in the technical training of Indians, and in the improvement of public services and utilities, which might give a real spurt to productivity and thus initiate a real improvement in the general standard of life. My chief criticism of this volume is, therefore, that it fails to deal adequately with war-time changes and developments, and with India's new economic opportunity arising out of these changes and developments. Possibly the authors intend dealing with these topics in their second volume. As it is, their conclusions with regard to the potentialities of rapid developments in the agricultural, industrial and allied spheres are insufficiently related to the events of the last few years. It is difficult for English readers to gauge the effects of the recent war on Indian conditions and prospects, and although this volume refers incidentally

to wartime developments and policies, it does not attempt to provide any summary of wartime influences and trends and hence fails to fill this obvious gap. This omission may partly be attributed to the fact that the book was published in 1943, and hence that many important wartime developments were then only in their early stages. It is to be hoped that a subsequent re-issue may provide an opportunity for reviewing wartime developments as a whole, and for stressing the importance of the unique opportunity for economic reconstruction thereby provided.

VERA ANSTEY.

The Natural Resources of China. By CHI-YUN CHANG. *Sino-International Economic Pamphlets*, No. 1. Sino-International Economic Research Centre, New York. 1945. 70 pp. \$0.30.

Written by an eminent professor of Chinese geography, especially of Chinese economic geography, this is a very informative introductory handbook on Chinese natural resources. Students of Chinese economics and others will find this volume useful as a source of background knowledge, especially if they bear in mind the limitations of a small book of this kind. In fact, in view of the appalling lack of new non-propaganda publications in this field, both in England and in the United States, any study incorporating new findings in the war years is worth while from the reader's point of view.

The economic problem of China should command some general interest, inasmuch as it exhibits in a high degree so many aspects of the problem of poverty, which is a common feature in many parts of the world. The economic development of the poor countries will be a stabilising factor in the world economy, at any rate in the long run. Consequently, the ease with which any particular poor country can be developed, as well as the quantitative significance of its development in relation to the outside world, is an important consideration both for the poor country itself and for the advanced economies whose investment and technical assistance will be required. The development of power and transportation, the keynote of the industrialisation process, will rank first. There is no apparent shortage of potential natural resources in China in these two fields, although the relatively small supply of iron and steel may eventually prove to be a bottleneck. Professor Chang is, however, fairly optimistic regarding the iron supply of China.

A very unfortunate but unavoidable gap in this volume is the absence of any discussion on the wider aspect of economic organisation, the way in which the State and the individual should jointly work the agricultural and industrial resources in existence. The struggle between individualism and collectivism in China, though overshadowed by the political scene, is still undecided in the economic field, and its outcome will no doubt be of lasting and wide significance. While official spokesmen have almost invariably favoured the description of a "balanced

economy" as China's future economic order, both they and Professor Chang (in this volume) have been silent on how exactly the balance should be struck.

Y. L. WU.

The Economic Development of French Indo-China. By CHARLES ROBEQUAIN. Translated by ISABEL A. WARD. *Supplement: Recent Developments in Indo-China, 1939-43.* By J. R. ANDRUS and KATRINE R. C. GREENE. Issued under the auspices of the International Secretariat, Institute of Pacific Relations. Oxford University Press, 1944. 400 pp.

Professor Robequain's book was originally published in French in 1939, but unfortunately only a few copies were distributed outside France before German occupation. Its translation now makes accessible to a wider public a rich mine of information which is significant not only for the narrow confines of the French colony, but which will be of greatest interest to students of the economics and sociology of almost any part of South-east Asia, and of colonial problems in general. Burma and Assam, for instance, show in relation to densely populated parts of British India astonishingly close parallels to the set-up, problems and developments in French Indo-China as they vividly emerge from Professor Robequain's masterly picture. It is the thrilling story of how widely heterogeneous regions (the heavily crowded districts of Tonkin, the empty wastes of Cochin China and Cambodia, and the mountainous jungles of Laos—regions which by themselves never had achieved any balance and cohesion) were, by the will and might of the colonising power, forged together into one integrated political and administrative framework in which initiative, expert leadership and systematic development became possible. The system of communications and of irrigation canals that was created, and the forms of enterprise which sprang up in mining, plantations and commerce are extremely well described. The discussion of the peculiar labour problems which arise from the demographic disequilibrium of the Union, and from the clash of widely different cultural groups and layers, contains many thoughtful observations of great use to those coping with similar questions in other lands. Sociologists will particularly appreciate Professor Robequain's lively descriptions of the changes in native society which foreign impact has induced, and of the peculiar aspects of disguised class struggle that arise when tensions inherent in processes of rapid class differentiation are blended with natural antagonisms between different racial groups. A few valuable observations are also recorded with regard to induced changes in the technical aspects of native agriculture, although Professor Robequain here tells only part of the story, as the question of land utilisation is dealt with exhaustively in a parallel study by M. Pierre Gourou, of which a translation, also sponsored by the Institute of Pacific Relations, seems to be in preparation.

In view of the wealth of information displayed in these first-hand descriptions one feels some regret that Professor Robequain has not dealt in similar detail with the wider question of how, on balance, Indo-China has fared within the framework of French Imperial policy. This vexatious tangle of highly political questions is, of course, continuously touched upon by Professor Robequain, but, treated in a mildly critical manner, they form merely the background of his study. Professor Robequain's book is, however, generously provided with references which will pave the way for curious inquirers.

M. Guy Lacam has contributed a historical sketch of Indo-China's currency system, revealing curious episodes in bimetalism. He also tackles the thankless task of evaluating some statistical material on public finance and private capital. J. R. Andrus and Miss K. R. C. Greene record in a supplement what little is so far known about the dramatic events prior to and during the war up to the middle of 1943.

H. BERNARDELLI.

Pessimism in Planning. By A. N. AGARWALA. Kitab-Mahal, Allahabad. 1945. 319 pp. Rs. 5-12, 10s.

Social Insurance Planning in India. By A. N. AGARWALA. East End Publishers, Allahabad. 1945. iv + 218 pp. Rs. 5-12, 10s.

Health Insurance in India. By A. N. AGARWALA. East End Publishers, Allahabad. 1945. iv + 144 pp. Rs. 4-12, 8s.

Mr. Agarwala's first book is a stimulating account of the obstacles facing centralised economic planning in India. Even if one does not share his pessimism, one cannot deny that he has succeeded in throwing cold water on the extravagant claims made by the "Bombay Plan" and similar proposals to raise the Indian standard of living dramatically by rapid industrialisation. Mr. Agarwala's arguments may be summarised as follows. (i) The prerequisite condition of effective economic planning is complete political unity and freedom so that the Planning Authority is free from foreign control and commands the confidence of the whole country. This condition is not fulfilled in India at the present moment and is not likely to be fulfilled in the near future. Even if the British Government were to give complete independence to India (and Mr. Agarwala entertains serious doubts about this possibility), the power of the central Planning Authority would still be gravely undermined, on the one hand by the Pakistan movement and on the other hand by the native princes whose territories break up India into fragments, like the pieces of a jigsaw puzzle. (ii) India cannot work out her economic salvation so long as the rupee is tied to the chariot wheel of sterling. Mr. Agarwala is not a very keen supporter of economic nationalism, but he doubts whether a weak country like India will get a square deal under a system of international *laissez faire*. (iii) The resources required to finance the Bombay Plan

must come out of India's sterling balances accumulated in this country during the war. Mr. Agarwala fears that Britain would either repudiate or block up these sterling assets as she is not likely to be able to supply India with the necessary capital and consumers' goods in the near future. (iv) Even if the above difficulties could be overcome, Bombay Plan will fail through top-heaviness, since it pays too much attention to industry in the narrow sense, to the neglect of agriculture and such highly important subsidiary industries as transport, insurance and mining. It further neglects the social limitations of India, such as illiteracy and lack of trained workers, religious prejudices, etc. It will be difficult not to accept most of Mr. Agarwala's arguments. Perhaps his book would have been more valuable had he been able to give a broad estimate of the relative importance of each group of difficulties instead of pursuing the easier task of lengthening his catalogue of obstacles as much as he can. But then Mr. Agarwala can retort that he has already listed the lack of reliable statistical data in India as one of the obstacles.

Mr. Agarwala's pessimism continues to his *Social Insurance Planning in India* in which he argues that the possibility of a Beveridge Plan for India is remote without better political conditions. It however finally breaks in his *Health Insurance in India* in which he examines the Adarkar Plan of Health Insurance, 1943, and concludes that it is "theoretically sound" and practically workable.

HLA MYINT.

La Naissance et le Développement de l'Étalon-Or, 1696-1922. By JACQUES E. MERTENS. Presses Universitaires de France, Paris. 1944. 475 pp.

The sub-title of the work is "The Facts and the Theories; an Essay in Economic and Sociological Synthesis". Analysis, the author says, has predominated in the economic thought of the present time, and synthesis has fallen behind. The representation of economic life given by analysis is necessarily abstract and schematised, and only a synthesis broadly conceived can reintegrate its complexities (p. 14).

The approach of economists to the history of the gold standard has been vitiated by a neglect of the human factor. They have usually been content to treat primarily of the supply of the precious metals, and to attribute to human intervention in the matter a rationality characteristic of the pure "economic man" (pp. 20-1).

The main part of M. Mertens' book is devoted to a historical account of the adoption of the gold standard by Great Britain, Germany, the United States, the Latin Union, and a number of other countries, and of the evolution of the gold exchange standard in India and elsewhere. Synthesis follows in the concluding forty pages.

He excludes from his subject paper currency and credit policy; "one question alone concerns us: why and how gold became the

sole metallic standard" (p. 16). Thus the question at issue is always the choice between gold and other metallic standards. The practical alternatives in the nineteenth century were silver and bimetallism.

M. Mertens lays stress on the opportunism which usually determined the monetary measures leading up to the adoption of a gold standard. He finds no trace of a reasoned or far-sighted policy. He is perhaps a little too ready to assume that the motives at work were those publicly disclosed. It often happens in practical life that the decisive grounds of action are not mentioned because they are obvious to everyone concerned.

From time to time M. Mertens has to record a movement in favour of gold apparently attributable to fashion or prejudice or to considerations of prestige. In the absence of any more tangible reason, he regards such a movement as an instance of human irrationality.

But he has very little to say about the real relative advantages of the several metallic standards in practical use. He says that in 1696 England legally had bimetallism, since both gold and silver coins were struck. That is not quite accurate. The standard was silver. The gold coins were a merchants' medium, and played little part as hand-to-hand currency. It was in small transactions such as wage-payments and retail purchases that silver coins passed by tale, and were subject to wear. Because they passed by tale they were liable to be clipped. Gold coin would more often pass by weight, and, even when it was accepted by tale, the recipient would scrutinise it with more care, in view of the substantial value of any considerable loss of weight on a single coin.

This was an inherent advantage of gold. The growing wealth of England, combined with the scarcity of silver, caused an increased hand-to-hand use of gold, and a consequent wear. But the loss of weight from wear corrected by the recoinage of 1774 (p. 64) was relatively moderate. It was a little more than four per cent.

Primarily no doubt it was the portability of gold that gave it the preference as a merchants' medium. At £3 17s. 10½d. a standard ounce, £1,000 in gold weighed about 17½ lbs. (avoirdupois) whereas at 62d. a standard ounce £1,000 in silver weighed over two hundredweight. Yet with the growth of credit instruments that advantage need not have been decisive. As Ricardo pointed out in 1816 (p. 103) paper currency based on silver could be used. Nor is the cost of transport of silver very much greater than of gold. A great part of the cost is insurance, which depends on value, and greater precautions are needed in the transport of gold.

Nevertheless the advantage of gold as a merchants' medium did not disappear in the nineteenth century. The reason, I think, was one to which M. Mertens makes no reference at all. That is the greater *cost of coinage* of a given value of silver.

In general, when an international balance came to be settled by a movement of the precious metals, the gold or silver was obtained

from the banks or traders of the debtor country *in coin*, and, in order to be used as currency on arrival in the creditor country, the coin had to be melted and recoined, or at any rate purchased by the central bank at a price calculated to allow for the cost of recoinage.

The cost of coinage of a given *weight* of gold was about three or four times that of the same weight of silver. But that meant that the cost of coinage of a given *value* was four or five times as great for silver as for gold. Consequently the specie points were much further apart for silver than for gold, and gold always tended to *move first*. Even silver-standard countries would hold a certain amount of gold for international use. The adoption of what was practically a silver bullion standard at Hamburg represented an attempt of a great mercantile interpost to avoid this disadvantage of silver.

No doubt the traders and bankers who urged a general adoption of gold at and around the time of the Paris Conference of 1867 were quite familiar with the fact that it was the gold-using countries that had the principal medium of international settlement at their disposal in the form of money.

M. Mertens does not think it necessary to formulate the essential characteristics of a gold standard, but he is inclined to reject as an imperfect compromise any monetary system, such as the limping standard, which contains silver or paper of unlimited legal tender not convertible by legal obligation into gold. The limping standard, however, was intended to keep the gold value of the monetary unit fixed, and it did so effectively. In France, so long as gold coin formed a great part of the active circulation, the option retained by the Bank of France of paying its notes in silver coin could not lead to any considerable premium on gold. In India there was little gold coin outside tightly held hoards, and the pressure of 1907-8 had to be met by sales of bills (Reverse Councils) to maintain the rupee.

M. Mertens stigmatises as a grave error the hesitation of the Indian Government to take this step (p. 309). He regards the one-way gold standard which prevailed in India from 1898 to 1907 as a deplorable half-measure. Here he seems to be assuming a gold standard of the classical type on a firm statutory basis as an end in itself. He has deliberately excluded credit policy and fiduciary currency from his subject, but that should not have involved an implied condemnation of a managed currency divorced from any metallic standard. He describes the state of the Dutch currency in the interval (1873-5) between the silver standard and the gold as a "paradoxical situation", when the rate of exchange of the guilder was determined by purchasing power parity (p. 279). But he does not make the same approach to the Indian currency, and he fails to see that the vagaries of the rupee were due to fluctuations in the wealth value of *gold*. The fact is that the rupee was a more stable measure of value when it fluctuated relatively to gold than when it was held fixed.

He insists that monetary policy in the period with which he deals was not "scientific". But in those days the desirability of a metallic standard was taken to be self-evident. So long as that was so, there was little occasion for an appeal to science in monetary policy. The issues as between gold, silver and bimetallism were purely practical, depending on the technique of coinage and the facilities for handling and transport of the precious metals. Economic science, however, did enter into consideration at two points: the theory of bimetallism and of the relation of the ratio to the supply and demand of the precious metals; and the freedom of melting and export of the standard coin. ¶ It is strange that M. Mertens has nothing to say of the latter question. The final measure which placed England on the gold standard was not the subordination of silver by the Coinage Act of 1816 (essential though that was) but the repeal of the restrictions on the melting and export of gold coin in 1819.

It will be seen that M. Mertens' synthesis is still incomplete. But that is not to say that his book does not contain much valuable material, and an able and informative treatment of his successive historical themes. But should he not have said something about the over-valuation of gold in Spain and Portugal in the time of Newton?

Unfortunately his statistical tables are not free from inaccuracies; by an error of transcription, price indexes have been entered instead of indexes of purchasing power of gold for the last eleven years of the series in the last column of Table 33, making the movements appear just the reverse of what they actually were.

R. G. HAWTREY.

The Federal Reserve System in Wartime. By ANNA YOUNGMAN. National Bureau of Economic Research, New York. 1945. 67 pp. 50 cents.

This survey of the activities and problems of the Federal Reserve System from 1941 to 1944 is thoroughly readable, as is to be expected from a member of the editorial staff of the *Washington Post*. It does not go very deep, being mainly content to bring together the known facts and call attention to their more important consequences. None the less, it provides a convenient, because up-to-date, review of the difficulties encountered by the system during the war years, and of the limitations which these will place upon its post-war activities.

Among the significant factors which Dr. Youngman cites, two may be picked out for comment. The first is the flooding of the whole banking system with Government securities, which must inevitably curtail severely the responsiveness of the supply of money to changes in the volume of business transactions. Secondly, the wartime stabilisation of interest rates, and by consequence of the relative capital values of long-term securities, has introduced a hampering consideration into future Federal Reserve policies. The joint effect

of these two new factors must necessarily be to limit the freedom of action of the System in attempting to impose control in any post-war financial situation, however critical. As a result, Dr. Youngman suggests that the tactics open to the System will be mainly selective, as opposed to generalised and quantitative controls.

It is interesting to compare with this foreshadowing of a trend away from remote and impartial influences, the appearance of a school of thought which urges Government guarantees for loans by commercial banks, in order to increase the latter's ability to be bold in supplying credit to industry. The combination of Government re-insurance of individual loans, which must involve acceptance of some responsibility for approving them, plus Federal Reserve policies directed towards selective control of the uses made of reserves, offers a picture of the possible trend of American banking in striking contrast to its traditions, and remarkably similar to the paternalism of certain political aspirations much nearer home.

J. K. HORSEFIELD.

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The Relation of Economic History to Economic Theory¹

By T. S. ASHTON

THE obligation to deliver an inaugural lecture must rank high among the impediments to vertical mobility in academic life. After some weeks of meditation on the matter I am constrained to suggest to the august personages who determine these things that the cause of learning and academic mobility might be advanced by the abolition of the requirement. If some ceremony were thought to be essential the newly elected professor might simply be sworn in and enrolled on the acceptance by him of the sum of one shilling in legal tender money. Or, if it were considered that this would impose an unwarranted strain on the University chest, the initiation might follow the tradition, long established in other fields of human endeavour, by which the apprentice, elevated to the rank of master-craftsman, "stands his footing" in a form which, unlike a lecture, can hardly with accuracy be described as dry.

In my own case there are special reasons for wishing that the obligation did not exist. By training I am more of an economist than a historian. In the first decade of this century I was one of a small group of students at Manchester who took draughts of Marshallian theory at the hands of Sydney Chapman, a teacher whose virile beauty of form and clarity of mind can never be forgotten by any of us who had that stimulating experience. Chapman, like Marshall himself, always insisted that high theory must be supplemented by realistic and historical investigation; it was under his direction that I made a few halting enquiries into the growth of businesses in the textile industries. Some years later, as lecturer in Economics at Manchester, I had the supreme fortune to be the colleague of one of whom Eileen Power spoke as the most original of English economic historians—a man in whom faith and scepticism, tenderness and irony, daring speculation and austere scholarship were combined in a way that only a biographer of exceptional insight and skill could possibly convey to those who had not been in daily contact with him. (Happily, I may add, such a biographer was found.) The personality of George Unwin was magnetic. One by one, the young theorists ceased to twitter in their nests of indifference curves and fluttered down to earth. If only the first World War had not deflected Chapman's abilities from academic life to government service, if only it had not broken Unwin's constitution, Manchester might have effected that synthesis of theory and history about which, at a later stage, I propose to offer a few remarks.

¹ An Inaugural Lecture delivered at the London School of Economics and Political Science, University of London, on 7th February, 1946, Professor R. H. Tawney in the chair.

These autobiographical details have been mentioned, not out of egotism, but simply in order to explain how it has come about that one who until recently made a living by teaching Currency and Public Finance now appears in the robe of the historian. When I think of the superb equipment of my predecessor in this Chair, of the learning that she bore so lightly, of her gifts of speech, of her literary grace and wit, of her personal charm, I can only say that the early death of Eileen Power was a catastrophe to historical studies comparable to that occasioned by the death of Unwin. If I say no more than that, it is because my knowledge of her (as distinct from her writings) was little more than could be gained in brief conversations before, after and (I must admit) during, examiners' meetings. To an audience of those who knew her as a colleague and loved her as a friend, it would be a clumsy intrusion for an outsider to offer mere words of praise.

One thing at least, however, I have in common with Eileen Power—there is her own word for it—a constitutional inaptitude for philosophic speculation. That is why I shall not attempt this afternoon to discuss at any length the ultimate purposes of the study of economic history. I will say only this. Interest in history, so it seems to me, arises out of the simple delight we all take in watching things grow—whether it be babies, or puppies, or delphiniums or social institutions. That in itself would make the study worth while. But the adult mind asks for something more than narrative: unlike that of the young heroine of *Northanger Abbey*, it is not satisfied with the book that is “all story and no reflection”. It seeks not only to see things grow, but also to know how things grow, and what circumstances are favourable, and what hostile, to growth. Now historians, political, constitutional and economic alike, are doing their best to satisfy that demand. They are increasingly preoccupied less with the configuration and more with the geological structure of their territories. Or, to change the metaphor, they are looking less to the physiognomy, and more to the bony framework and organic processes, of the societies with which they are concerned. And, however it may be with other kinds of historians, economic historians, by their very nature, can hardly look at the past, as H. A. L. Fisher looked at it, seeing “only one emergency following upon another as wave follows upon wave, only one great fact with respect to which, since it is unique, there can be no generalisations”, seeing only “in the development of human destinies the play of the contingent and the unforeseen”. It is, of course, true that every historical fact is unique, just as it is true that every individual body and soul is unique. But the uniqueness of the individual does not preclude the possibility of statistical generalisation where large groups are concerned. Economic history—whatever may or may not be true of political history—is concerned with large groups: with the general, rather than with the particular; with processes, rather than with events; with the typical, representative or statistical fact, rather than with the unique, individual fact. And

it is about such groups, such processes, such facts, that the modern mind seeks to satisfy its curiosity.

But it is not curiosity alone that draws men and women to the study of history. Interest in the past arises as often as not out of the urgencies of the present, and it is because of a belief that history has some meaning and message that so many people, especially of our own unhappy day, turn to it for both guidance and solace. Even if some who seek fail to find in it direct answers to the questions they ask this does not mean that the search has been in vain. For the fruits of history, like those of all humane studies, are things not only of the mind but also of the spirit. Let me recall the words of one of the greatest sons of this University and of this School, a man whose energies were given to pursuits not closely related on the surface to historical studies. "I set great store by objective actuality," wrote Lord Stamp, "not merely because it creates a sense of history, the base of sane judgment of things relative, and of economic sense in arranging them, but because that same historic sense is the best nursery of resolve, selflessness and public spirit". What more need be said ?

II

Economic history is but one country in a great hemisphere of scholarship. Its position between History on the one hand and Economics on the other reminds me of that in which the diminutive Boswell found himself when acting as interpreter between Dr. Johnson and the Corsican General. "I compared myself," he said, "to an isthmus which joins two great continents." Now an isthmus may either connect or separate. Those who inhabit it may build up an independent life and character of their own or, as more often happens, they may fall under the tutelage of one or other of the neighbouring powers. For long, economic history remained under the domination of the politically minded historians. Like the British in Egypt, or the Americans in Panama, these brought with them a developed technique; they raised the subject to academic status; and, on the whole, they exercised a civilising influence. But their work is now done, and labour is required to clear away some of the traces of their occupation. The very periods into which economic historians divide, one from another, their varied specialisms, are still described in terms drawn from the vocabulary of politics or political history. "The Feudal System," "Mercantilism," "Laissez-faire," "Collectivism": the ideas behind words such as these are associated with the policies of government rather than with the postulates of economic science. Not many years ago in one university the special period of English economic history, prescribed for students in the Honours School of Economics and Modern History alike—the period 1830-48—was described, not as the age of the railways, or of joint-stock, or of Free Trade, or of the Chartists, not even as the

Age of Cobden or Peel, but as the Age of Louis Philippe. One widely read text-book announces that Napoleon I restarted the Industrial Revolution in France—as though that series of inter-related technical, economic and social changes were a mechanism to be stopped or started at the bidding of a dictator. There are still writers who believe that some Colbert or Frederick or Bismarck, some Marx or Lenin, was really “the obstetrician of a new age”. And there are even some who so confuse Economics with Technology as to think that, because wars sometimes lead to inventions, those who make wars are to be given a place among the pioneers of social development.

In face of such crude interpretations it is the duty of economic historians to point to those spontaneous forces of growth in society that arise from ordinary men and women and find expression in voluntary association, as well as in the state. “Society,” Unwin once said, in one of those *obiter dicta* which every good teacher uses to arouse his students from their habitual torpor—“Society cannot direct its destiny by policy”. As it stands, that is perhaps an overstatement. But it sprang not from any spirit of negation, but from exasperation with those so obtuse that they fail to see in History any territory in which the writ of the sovereign state does not run.

It is not, however, only the political historians and political theorists that have occupied the isthmus. At a later stage there appeared a swarm of sociologists and economists of the so-called Historical School, bringing with them an avidity for classification that might well have done credit to a contemporary academy of botany or zoology. With great ingenuity they traced out stages of economic development through which all societies were supposed to travel: from barter, through money, to credit; from a subsistence economy, through a village, town and national to an international economy; from an eotechnic, through a paleotechnic, to a neotechnic phase; from household production, through a gild and a domestic, to a factory system; from pre-capitalism, through mercantile capitalism, industrial capitalism, finance capitalism, monopoly capitalism, and several other forms of capitalism to wherever you will. Those who constructed them hoped that in time their schematic presentations might come to be regarded as a body of doctrine, parallel to, and perhaps in the end destined to supersede, what used to be called the laws of Political Economy. That hope was a fond one. Take only the first of the series: Hildebrand's master-generalisation about the development from barter, through money, to credit. Professor Postan has pointed out that when documented history began money was already in use; that though there have been many periods of advance towards, there have also been others of retreat from, a greater money economy; and that in times of which it was assumed that men exchanged their goods and services only through the medium of the precious metals there was, in fact, a highly developed system of credit. There is no need to proceed with the other pedigrees of economic institutions. “Every-

thing we know about economic history warns us against belief in steady advances and unbroken lines of progress." The quotation is from Eileen Power's posthumously published work and expresses her mature judgment on this matter.

It is not to be denied that the effort to discover stages of development has yielded some useful results. It has at least presented us with a set of labels which we can attach, if we are so minded, to the files in which we assemble our facts. But facts are stubborn, wilful things. You can arrange them in either logical or chronological order, but very seldom at the same time in both. Therein lie at once the difficulty and the fascination of historical composition.

It is not only the systematisers who have, as I think, on balance done harm to the subject. The whole practice of coining phrases and attaching them to particular periods of time has tended to cloud, rather than illumine, our vision of the past. The attribution to the years 1760-1830 of the epithet "The Industrial Revolution" is the outstanding case in point. We now know that the essential changes began long before the year of the accession of George III. Has not Professor Nef called attention to a remarkable speeding-up of industrial development in the hundred years from 1540 to 1640, and has not Miss Carus-Wilson discovered an industrial revolution as early as the thirteenth century? Every first-year student is now aware, moreover, that 1830 was in no sense a terminal date, and that many of the processes which the phrase Industrial Revolution connotes were made manifest far more fully in the forties, fifties and sixties than in the earlier decades of the nineteenth century.

It is now too late to alter this particular superscription, for the words have entered the currency of common speech from which there is no recall. But for other periods something may yet be done. Take, for example, the years 1873-96, to the whole series of which the term "The Great Depression" has come to be attached. Thanks to the work of Lord Keynes, Mr. Beales and Mr. Rostow, we now have a clearer view of what was really going on than was open to the members of the *Royal Commission on the Depression of Trade and Industry* which issued its final report in the middle of the period. We know that in the technical sense of a fall in the marginal efficiency of capital there *was* depression. But we also know that, alongside the dwindling of profits, there took place a great expansion of the national income, an increase in the proportion of that income that went into the pockets of the workers, and a substantial rise of average real wages. These are not movements of the kind that the plain man normally associates with depression. To him (quite wrongly no doubt) the word means unemployment, falling wages and distress. That unemployment was particularly marked during the period is disproved by the figures of the trade unions. Yet the belief persists and finds expression annually in the scripts of many candidates for degrees of this University. It has been encouraged by a curious incident of literary scholarship.

In a footnote on a page of their great work on English Local Government the Webbs point out that the first recorded instance of the use of the word "unemployment" known to the compilers of the Oxford English Dictionary was in 1888, and the first use of "unemployed" as a noun in 1882. The statement is elevated to the text in Mr. Ensor's *England 1870-1914*; and it appears again (with some reference in the text) in a footnote to the third volume of Sir John Clapham's masterpiece. Now a few years ago it fell to me, as external examiner, to read two theses submitted for the degree of Ph.D. of the University of London. In the first of these, written by Mr. H. J. Carr (now Dr. Carr) my eye caught, in a quotation from John Frances Bray's *Voyage from Utopia*, the words "unemployment results in begging or street-singing". These words were written in 1840 or 1841. In the second thesis written by Mr. W. McLaine (now Dr. McLaine) again my eye caught, among a statement of proposed alterations in the rules of the Journeymen Steam Engine and Machine Makers' Friendly Society, under the date May 31st, 1841, "That no allowance be made for office bearers for the benefit of the unemployed".¹

If there is any significance in the fact that these words did not become current in literary circles until forty or more years later, it does not lie in any increasing incidence of unemployment. Nor do any of the distinguished historians whose names I have mentioned draw any such inference. In the early decades of the nineteenth century middle-class observers of working-class life failed to distinguish between the new wage-earners who were pouring in and out of the factories and that amorphous mass of the "poor" from which most of them came. But the trade-unionists and Bray saw more clearly. By the eighties—and not least because of developments during the so-called "Great Depression"—it had become plain to all that an independent working class had emerged. To those who belonged to it temporary loss of work did not necessarily mean destitution. Observers were at last learning to disentangle the problem of unemployment from that of poverty. It was the beginning of wisdom in social investigation.

Perhaps it should be added that there is no reflection on the watchfulness of the compilers of the Oxford English Dictionary: it could hardly be expected that they should be familiar with the sources I have mentioned, or, indeed, with the vocabulary of early Socialism and Trade Unionism in general. But it is not without profit to observe some of the results that might come of relying on lexicography as a means of reaching to the origins of economic institutions. We should find ourselves attributing, for example, the beginnings of industrialism to the year 1831, of trade unions to the same year, of capitalism to 1854, of inflation (in the monetary sense) to 1864, and of deflation to 1919.

¹ Even in the eighteenth century the use of 'unemployed' as a substantive was not unknown. "A perpetual influx of the unemployed from the north pours into Edinburgh and its vicinity . . ." George Robertson, *General View of the Agriculture of the County of Midlothian* (1793), p. 26.

But to return to my theme: the phrase "The Great Depression" is one of the few of these established captions which bear an economic rather than a political import. Attempts have recently been made to introduce others. One by a writer who heads his chapter on the years 1858-73 with the words "The Great Boom" must encounter mental resistance from anyone bred in Lancashire where, until quite recently, it was possible to meet people who preserved lively recollections of the Cotton Famine. There is, it is true, something to be said for these attempts to set the milestones at the periods at which cyclical depression turns to recovery, or, more widely, at those at which major downswings of general prices give way to upswings. But it is a misfortune that those who would divide up the past in this way are not content to say what they have to say in plain English. There is a model set by an early historian which ran as follows: "And the seven years of plentiousness that was in the land of Egypt were ended. And the seven years of dearth began to come." But such words are too direct for these sociological surveyors. After reading Professor Schumpeter's otherwise admirable work on *Business Cycles*, I am dismayed at the thought that the pages of economic history may come to be littered with Juglars, Kondratieffs and the like.

What is the drift of all this? Simply to say that economic history is concerned primarily with processes that persist over long stretches of time. It is preoccupation with these that binds economic historians together and differentiates them from other kinds of historians. Some specialisation by periods there must be, since to elicit information from a Charter or Pipe Roll requires skill of a different order from that needed to draw out the meaning hidden behind the magisterial pronouncements of a Royal Commission, or submerged in the detail of a nineteenth-century business ledger. But the centuries and years of the calendar should supply all the palings we need: it is unnecessary to plaster these over with signs. "Stick no bills", and "Leave no litter", are maxims of conduct for the historian as for the citizen.

III

Understanding of the processes which it is the business of economic historians to trace through the centuries does not come by the light of nature. The data do not wear their hearts on their sleeves: it is only by selecting and grouping them that they can be made to yield a meaning. But (as others have said) as soon as the historian begins to select his facts from the myriads available to him he becomes a theorist of sorts. The poorer type of historian is one who allows the stray reflections that pass through the mind to serve as a substitute for the thought that the processes of selection and grouping demand. And even the historian of disciplined intellect requires some more or less systematic body of principles to which he can relate his facts; for, as Ben Jonson remarked, "Very few men are wise in their own

counsel or learned by their own teaching". To repeat: the economic historian, like the fisherman, needs a net, to help to separate those fish that may be marketable from those that may as well be left in the sea. But it must be a net made by skilled hands and not just a reticulation of odd ideas. The men who make the special nets for the craft are the economists.

This somewhat blunt statement will appear as a platitude to some, but as a rock of offence to others. Is it not, these latter will ask, an attempt to justify yet one more of the long series of efforts to interpret the human story in the light of a doctrine? Even if that were so it would not dispose of the matter. For the question might be answered by asking for the alternative. "Don't forget," wrote James Wilson in an early page of that great journal of which he was founder and first editor, "the people who attack Political Economy have a Political Economy of their own; and what is it?" But the real answer to those who shrink from the suggestion that modern economic theory should be applied to the study of earlier forms of society is that they misunderstand the nature of Economics. For, whatever may have been its origin, the subject has ceased (or almost ceased) to be a set of conclusions and has become an apparatus of thought: no longer a doctrine, it has become a method. The only question is whether this method is appropriate to the study of history.

Until recent years the answer might have been in the negative. For though Adam Smith had provided a nursery in which it was possible for theory and history to play happily side by side, as theory grew up it became cold and abstracted; and a later preoccupation with margins completed the rift. The static analysis on which most of us were reared had its uses, but it had little or no bearing on the problems of change over periods of time. Professor Robbins put the correct relation between the two disciplines neatly when he said that Economics is concerned with the form, Economic History with the substance. Most of what I have to say this afternoon is a variation on that theme. But it can hardly be said that at the time when he coined the aphorism the form was really appropriate to the medium: economic historians were offered a set of implements devised for other jobs than theirs—tools that would cut only *across* the grain, and not, as they required, *along* the grain. It is true that about the same time, in one brief article, Allyn Young pointed the way to that theory of economic development which is what is needed: had historians taken more heed of this we should have been spared some barren disputation as to whether expansion of trade precedes or follows expansion of industry, and so on. But economists as a whole were beset with so many problems of current concern that they had little time for sustained thought on these wider questions. If, in the event, they have shaped an instrument that may be of use to historians it is by accident rather than design.

It was during and immediately after the first world war that there took place the first of those developments in thought that have made

possible a closer intimacy between economists and historians. Under the pressure of events, economists became increasingly less theoretical and more statistical in their approach. It would be too much to attribute to contagion the tendency of economic historians to concern themselves with the statistical aggregate or average, rather than with the outstanding or picturesque incident. For that tendency had long been at work. The senior British economic historian, Sir John Clapham, certainly did not wait for the impetus to a quantitative treatment to come from the professional statisticians, though he would, one imagines, be among the first to recognise the great service that Professor Bowley has rendered to our subject. The work of Bowley and those he has trained and stimulated is certain to have a profound effect on the future of historical studies. It has made us all less tolerant of the loose, unsupported generalisation: it is to be hoped, one may add in passing, that the infiltration of statistics will not make our text-books any less readable.

The violent movement of prices during and after the war turned attention to the causes and social consequences of changes in the value of money. Here was a field which required the skills of economists, statisticians and historians alike. Where so much valuable work has been done by so many students it is invidious to mention individuals, but I cannot refrain from reference to the light thrown on the social history of the sixteenth and seventeenth centuries by Professor Hamilton's study of the effects of Spanish Treasure; to the clearer understanding of the economic background to the French Revolution that has come from the brilliant and scholarly work of M. Labrousse; and to the enormous debt that every student of the last quarter of the eighteenth, and the first half of the nineteenth, centuries owes to the statistical labours of Professor Silberling. More recently, the assembly of material on prices by Sir William Beveridge and his colleagues for England, and of Posthumus for Holland, opens possibilities of new interpretations of large tracts of the past. The part played by the banking system in the upward and downward swings of prices from 1914 to 1925 led to investigations by Hawtrey, Cannan, Feavearyear, Angell, Viner and Morgan into the similar movements of the years 1793-1821; and it has not been without effect on scholars, like Mr. Judges, who have worked on the same set of problems in earlier centuries.

Out of the exigencies connected with the growth of the national debt between 1914 and 1920 came a revival of concern with the theory of interest; and this, in turn, led to a study of the effects of changes of both long- and short-term rates on investment and activity. I wish it could be said that here too there had been enquiries by historians parallel to those of the theorists. But the field has remained almost entirely without cultivation. We have, it is true, detailed information about the course of Bank Rate and the yield on Consols over the last two centuries. But until relatively recent years these official rates were but loosely tied to those that prevailed in transactions between

merchants and manufacturers. What we need is tables of rates in force in long-term business contracts and in day-to-day operations of credit.

Chronological tables of rates of interest, similar to those of the price series, would be valuable in a variety of ways. Changes in short-term rates, as Wicksell pointed out, have important effects in determining the nature of the medium of circulation. The high rates of interest between 1797 and 1815 stimulated the substitution of small bills of exchange for notes and even for coin; and the fall in the rates that followed the Napoleonic war was accompanied by a reversal of the process. It may be that if we knew more of these things we should find that those earlier oscillations from money to credit or from credit to money, to which I have referred, were susceptible of similar explanation. Changes in the long-term rates of interest, it may be supposed, had even more potent effects. Long ago Philip Wicksteed made the interesting observation that the substantial quality of the houses in many Dutch cities might be attributed to the fact that, at the close of the eighteenth century, interest on good security in Holland was as low as two per cent. I have often wondered whether the first country textile factories of the north of England (so different, at least in outward appearance, from the satanic mills of text-book imagination) do not owe their permanence and their beauty to the accident, if accident it was, that they were constructed during the period of low rates of interest between 1783 and 1797. And these low rates may also have had an effect on such things as the depth to which mines were sunk, the size and type of the dwellings of the workers, the state of the highroads and the development of canals.

It would not be an easy task to trace the changes in the rate of interest in earlier centuries. Something might indeed come of a re-examination of the transactions of those usurers with whom Professor Tawney has so close an acquaintance. ("Acquaintance" rather than "friendship" would seem to be the appropriate word.) And it should be possible to follow the major changes in long-term rates by careful study of mortgages and the terms of purchase of farms or fixed annual payments. The results might well justify the labour. Mr. Habakkuk has shown how enclosures declined as the rate of interest rose between 1690 and 1715; and a chronology of interest rates during the two preceding centuries might throw light not only on the breaking-in of the waste and the development of more capitalistic methods of cultivation, but also on changes in the technique and structure of early manufacturing industry.

The reconsideration by the economists of the nature and effects of national debt had results in other spheres. There is need for historians to rewrite their essays on the financial policies of, for example, Peel and Gladstone in the light of new ideas. If it were possible to extend to earlier periods those methods of estimating national income and capital that have been devised by economists and statisticians of this

generation, we should be able to speak with more assurance about the wider social effects of these policies. We might also be able to answer with less hesitation the question as to how far what seem to us the miserably low standards of comfort of the labouring classes in earlier times were the inevitable consequences of low productivity and how far they resulted from avarice or want of social sympathy on the part of employers and landowners.

Again, in the nineteen-twenties, the problems of external debts and reparations led to re-examination of theories of international trade and the foreign exchanges. The principles laid bare by Taussig, Angell, Ohlin, Viner, Whale and others are now beginning to inform the work of historians. The concept of the terms of trade, essentially a historical concept, might be used to enlighten discussion on the economic relations between nations in earlier centuries, and, applied internally, on those of the relative rates of growth of agriculture and manufactures.

Yet again, the development in the 'twenties of monopolistic forms of organisation led other economists to refine that theory of value which had hitherto seemed to serve their purposes. Studies in imperfect or monopolistic competition provide tools better shaped for work on the past, no less than on the present, than those in perfect competition or pure monopoly on which most of us were brought up. How effective these tools may be has been demonstrated by several historians, notably by Mr. Burn in his scholarly study on the history of steel-making.

Unemployment and labour disputes in the same period drew the attention of other economists to the unsatisfactory state of the theory of wages, and new formulations resulted. Mr. Rostow has applied Professor Hicks' analysis to one period, at least, of the nineteenth century. But it can hardly be said that the second thoughts of economists in this field have yet been reflected in the works of economic historians in general. Thanks to Professor Bowley, we know something about the course of real wages in the nineteenth century, and others, like Knoop and Jones, and Mrs. Gilboy have provided valuable material for earlier times. There are excellent histories of trade unionism, detailed studies of labour movements such as Chartism, monographs on factory reformers, and chronological accounts of industrial and social legislation. But we know very little about the gradual changes in the status of the workers, and in their personal relations with the employers. Let me give one example of the kind of relation I have in mind. No one who glances through the records of industrial concerns of the period we call the Industrial Revolution can fail to be struck by the almost universal tendency of the workers to borrow from their employers on the security of future earnings. The effects on the mobility and bargaining strength of labour are obvious. To-day, as John Hilton has reminded us, debt is the key to all working-class life; but the debt is no longer owed to the employer, but to agencies outside the factory—money-lenders, pawnbrokers, above all instalment-

selling concerns. Where and how was the change effected? I know of no economic historian who has investigated this or similar matters. Or, to mention a wider problem: we are almost entirely ignorant of the changes in the relative scarcities of different kinds of skill and of the elasticities of substitution between labour and capital at particular periods of time. Yet these are matters which may in the end prove to have been of at least as much account as the self-sacrifice of Lord Shaftesbury or the devoted energy of Ben Tillett. Labour, in the sense in which the word is used by the economist, still awaits its historian.

It was in the decade before the recent war, however, that there occurred the most spectacular of those developments in thought which make possible a closer co-operation of economists and historians. In this many played a part, but the work of Lord Keynes is outstanding. The introduction of an income-and-expenditure approach to the problem of money and prices and the analysis in terms of aggregates, rather than of marginal differences, were of some consequence. But what is even more important than these is that, at last, the theorists have provided an organon that can be applied to explain those alternations of activity and depression that have characterised the last two centuries or more of economic society. If we accept Lord Keynes' teaching that (except in conditions of full employment) the growth of capital is retarded, rather than advanced, by a low propensity to consume, we must seek the causes of that growth, no longer in the parsimony of the early factory employers, but in the relatively high expenditure of others (including the government) during the formative years of the Industrial Revolution. Already the economic outlines of the nineteenth century are seen in a new light. It should be an exciting experience for some young specialists in, say, the fourteenth century to discover how far the modern analysis can be used to explain the trends of a period in which land and money were virtually the only alternative ways of holding wealth, and in which credit institutions were still rudimentary.

The effect on the study of the development of particular institutions is likely to be profound. For to write of these, as some have done, without reference to the periodic variations of activity is like writing the life-history of a tree without reference to the climate or the seasons. The fluctuations of interest, investment, incomes, employment and prices are not just incidents to be mentioned in passing: they are an essential part of the environment in which social and political institutions flourish and decay.

(Among other conditions of appointment to the Professorship of Economic History, Mr. Chairman, is one which lays it down that the holder "shall direct research". A nineteenth-century novelist put the matter in other words when she wrote of "that form of authorship which is called suggestion, and consists in telling another man that he might do a great deal with a given subject, by bringing sufficient amount of knowledge, reasoning and wit to bear upon it". Interpreted

so, there is one duty of this office for which I hope I have indicated if not an aptitude, at least a relish.)

What has been said so far may be read by some as an invitation to theorists to occupy the isthmus. That is not the intention. The interest of the economist in the past arises, as often as not, out of a wish to test his conclusions in a series of different environments: the interest of the historian is wider than that. The theorist has taught us that economic phenomena are bound together in ways that the uninstructed would not suspect. He has created an apparatus which explains any given economic situation in terms of profit expectations, the propensity to consume and so on. But beyond that he cannot go. It rests with the historian to trace the causes, or as he would prefer to say, the antecedents and predisposing circumstances of these expectations and propensities: to say how it came about that at one time men were inclined to spend freely, and at another to hoard their resources, how it was that men were enterprising and optimistic in this year or this decade, cautious and penurious in that. Sir William Beveridge tells us that in his pursuit of prices and wages through the centuries he was like one driving a car by night through unfamiliar country, with the glare of headlamps lighting up a narrow strip of road, and giving only occasional glimpses of the surrounding countryside. The historian can be no mere tourist: he must be a native who knows the fields and hedges and hidden valleys, as well as the highroads. All that is urged is that, when moving along some more or less defined route he should trust less to unaided vision or native wit and more to the processes of systematic thought: that he should make some use of imported headlamps. Not all the gadgets that the economist carries in his toolbox will be of direct use to the historian; some are whetstones for the sharpening of other implements; others, one suspects, are little more than ingenious toys. But that some of those I have mentioned can be used to make a cleaner job of our work on the past seems to me already to have been set beyond doubt.

I have said something about what the historian may learn from the economist, but little or nothing of what the economist may gain from a closer contact with historians. It is often urged that some acquaintance with history may save him from the hasty conclusion, the easy generalisation, the belief that because an idea is new it is true, the tendency to dogmatism. I would not lay stress on this, for, in my experience, economists are no more prone to these weaknesses than other specialists. The poor fellows, indeed, have so often been reproved for being unrealistic and dogmatic that some of the best of them have developed an inferiority-complex and are apt to hold their golden peace when matters are in debate on which, it might be supposed, words from them might be of service. Nor is the gain merely that of being able to try out theoretic models at different altitudes, though there is something in that. It lies in the reminder that the institutions or factors about which economists generalise are

concrete realities, with a past without knowledge of which they cannot be apprehended: in that widening of experience in time which history offers to us all.

Given patience, I am not without hope that we may break down that suspicion of all empirical generalisations that lurks in some of the more remote caves of the economists. For there are still theorists who are wounded in their pride at the suggestion that an historical fact or argument might sometimes be injected, with advantage to their dialectics. When, greatly daring, the historian ventures to put in a word the impression created is like that which might follow the entry to a drawing-room of a ploughboy with the mud of the fields fresh on his boots. If, however, the historian is called upon to apologise for his "brute facts" he may reasonably ask for similar courtesy when the economist pays a return visit and brings, as his contribution to historical discourse, the hypothetical reactions of a hypothetical Robinson Crusoe to his hypothetical surroundings. But the whole discussion as to whether deduction or induction is the proper method to use in the social sciences is, of course, juvenile: it is as though we were to debate whether it were better to hop on the right foot or on the left. Sensible men endowed with two feet know that they are likely to make better progress if they walk on both.

To sum up: the historian is increasingly feeling for the structure that underlies the surface of events, for explanation and interpretation. The economist is increasingly concerned not with static equilibrium, but with the transition from one equilibrium to another, with problems in which *time* is one of the dimensions. If they will take counsel together they may move towards that ideal in which no longer will the one look at his facts in the hope of inducing from them a theory, and the other deduce from first principles a theory in the hope that it may be found to fit the facts, but in which the two co-operate so that, in the words of Croce, the facts and the theory demonstrate each other.

A word of warning: in order that there should be discourse between the two disciplines it is not necessary that historians should incorporate into their speech the phrases in which economists reveal, or conceal, their thoughts. For the language of economists is full of strange sounds and is apt to change with all the disconcerting inconsequence of American slang. The economic historian must know about, for example, the Multiplier; but the Multiplier is an ugly brute (especially when seen in reverse!) and there is no need, I suggest, to give him prominence in our pages. All that is wanted is some form of Basic English in which theorists and historians can converse: there might well be a conference called to consider the matter.

IV

Economic history, though an isthmus, is a wide territory. In this lecture I have said nothing of many of its outlying provinces: nothing of that area in which the demographers are sinking their shafts to

strata deeper than the economic; nothing of that terrain, explored by Mr. Beales, where industrial and social streams of development mingle their waters; nothing of that region of battles between old privilege and new aspiration which the Hammonds have observed with their clear eyes and described in their sensitive speech; nothing of that coast, known to few as to Professor Tawney, where the waves of economic impulse beat on the eternal verities. That is not because I count these provinces as of small importance. It is, in fact, precisely in them that the moving frontier of the subject is likely to be pushed forward with most benefit. But, even in these, no economic historian is likely to add much to the work of the pioneers unless he brings with him some at least of the appliances of modern thought.

There is a group of historians who are disposed to argue that the course of events of each age expresses, in some way not very clearly defined, the spirit of that age. In the writings of some that spirit or *Zeitgeist* ceases to be merely an habitual character and becomes a dæmon, sometimes almost a malicious personal devil. There are others, less apocalyptic in outlook, who write of some abstract idea, such as Capitalism, as though it had the attributes of a living human being. It would be foolish to deny the existence of the phenomenon of Capitalism: the whole set of influences of which I have been speaking this afternoon may, indeed, be usefully described as manifestations of it. But what is to be resisted is the tendency of some who make much use of the word to a teleological interpretation of events: Capitalism required this, demanded that, necessitated everything. Now these interpretations of history in terms of brooding spirits or personified forces press heavily on the mind, especially of the young, who are apt to take them seriously. They lead not to faith and effort, but to pessimism and inertia. It may even be that the larger infiltration of the ideas of the economists for which I have pleaded, will in less degree, have something of the same effect. If, by the grace of God, we managed to cast out the devil of Teutonic mysticism from the house, of what profit would it be if we let in seven more demons under the name of Economic Determinants?

The best antidote I can think of to all this is detailed work on the records of some one merchant, manufacturing concern, banking house, trade union or other organisation. The sense of the individual or group overcoming obstacles and building some fragment into the social fabric is heartening. And since, until within the last hundred years, life had not become departmentalised, the ledgers and letters and pay books tell us much, not only about prices and terms of credit and wages, but also about the people of whose work they are the record. The student will learn from them, it may be, little about the Spirit of the Age, but he will come to know more about the spirit of men. And in the light of that knowledge some of what pass as works of history will come to appear as shabby caricatures, often little better than crude libels on the dead.

The study of what by yet another misfortune of terminology has come to be called business history should be pursued alongside the interpretation of the past with the aid of the apparatus of economic thought. For it is in the business unit that economic forces can be seen in operation, as it were in the front line. Business history may serve as a reminder that demand and supply, the various elasticities and multipliers, the determinants and stabilisers, are all generalisations, useful indeed, but causal factors at one remove; and that it is the wills and choices and acts of men and women that are the ultimate data for economists and historians alike.

Rural Population in England and Wales, 1911 and 1931

By A. L. BOWLEY

IN 1914 I read a paper to the Royal Statistical Society in which I traced the changes in rural and agricultural employment in the period 1861 to 1911. It has been suggested to me that it would be useful to bring the series of statistics up to a more recent date. This date cannot be more recent than that of the Census of 1931, since the relevant figures for later years are not available.

In my former paper I laid emphasis on the nature of the administrative classification of areas in England and Wales into Urban and Rural Districts, and on the difference between employment in Rural Districts and agricultural or land occupations. In fact many persons in Urban Districts are engaged in land occupations, especially in domestic or market gardening, and many in Rural Districts in non-agricultural work, such as coal-mining or in factories besides the mechanical and service trades connected with agriculture. Rural population is not coincident with, nor in different regions proportional to, the numbers occupied on the land.

It has not been practicable to follow exactly the same lines as in 1914, but the same problems are considered, and in particular the relation of occupations to the density of population is again analysed. The age distribution of agriculturists as contrasted with that of all occupations is dealt with in the final section.

Before proceeding to details, some general explanations are necessary. The administrative divisions of England and Wales are as follows, with the number of each in 1911:

Administrative Counties	..	..	..	62
C.B. County Boroughs	..	..	..	75
Met. B. Metropolitan Boroughs and the City of London	..	..	..	29
M.B. Municipal Boroughs	..	..	..	249
U.D. Urban Districts	..	..	..	812
R.D. Rural Districts	..	..	..	657
C.P. Civil Parishes	..	..	..	14,614

In earlier times there were 40 Counties in England and 12 in Wales.¹ Now Yorkshire is divided into its three Ridings, Lincolnshire is separated into its three Parts (Holland, Kesteven and Lindsey), the Isle of Ely is separated from Cambridgeshire, and the Soke of Peterborough from Northamptonshire. Suffolk and Sussex are each divided into East and West, and Hampshire into the County of Southampton and the Isle of Wight. Also London is a County.

¹ Monmouthshire is often associated with Wales for statistical purposes.

In many statistical tables the County Boroughs are associated with the Administrative Counties in which they stand; e.g., Berkshire includes Reading in some of the Census Tables and excludes it in others. County Boroughs include all the great Cities and most of the smaller ones with a population over 50,000; some other cities of historical importance, such as Canterbury, are also County Boroughs. For some purposes totals in the Census are given which merge with County Boroughs all other Urban Districts (24 in 1911) with a population over 50,000. Municipal Boroughs are those governed by a Mayor and Corporation, some of which have very small populations (e.g., Wareham 2002, Lampeter 1802, in 1911), which but for their antiquity would be villages in Rural Districts or classed with other Urban Districts.

For our present purpose it is the division between Boroughs and other Urban Districts on the one hand, and Rural Districts on the other, that is important, since this is the line usually drawn when total Urban and Rural populations are contrasted, or compared with a supposedly similar division in other countries. An Urban District is constituted, by an Act of Parliament, out of part of one or more Rural Districts, when there is a sufficient concentration of population to make it advisable to give it certain powers of local administration. Though there is no exact rule, analysis suggests that little market towns or concentrated villages with more than 2,000 persons is the limit of size; but a more important line of division is to be found in density of population. Where there is more than one person per acre the region is not purely agricultural, and houses are sufficiently concentrated to need some corporate administration. It is found on examination of successive Censuses that Civil Parishes with a density greater than 1 per acre at one date frequently have been constituted as new Urban Districts or been merged in neighbouring Urban Districts ten or twenty years later.

No definite line can be drawn, however, either by population or density, which actually separates one administrative class from another, as the following examples show.

	1911		Persons per acre
Urban			
Merthyr Tydvil C.B.	17,761	80,990	4.0
Camberwell Met. B.	4,480	261,328	58.3
Wenlock M.B.	22,657	15,244	0.6
Stow on the Wold U.D.	45	1,301	28.9
Rural			
Castle Hill, Dudley, R.D.	69	12	0.17
Croydon ¹ R.D.	21,018	65,133	3.1
Rothbury R.D.	166,904	4,606	0.03
including			
Alnham C.P.	10,345	106	0.01
Conisbrough C.P. in R.D.	4,299	11,059	2.6

¹ Not including Croydon C.B., but the Rural District round Croydon.

A Civil Parish is the smallest unit recognised in the administrative analysis, and is often not coincident with an Ecclesiastical Parish. On an average a Rural District consists of about 22 Civil Parishes, though there is considerable variation. If a Rural District has a population density over, say, 40 per 100 acres, one may suspect some urban, industrial or mining influence. If a Civil Parish has a density over 30 per 100 there is probably some similar non-agricultural activity.

In Urban Districts, including Boroughs, the numbers classed under agriculture are considerable. These are mainly domestic gardeners, nurserymen or market-gardeners, but in some cases large cities have extended their boundaries to include open agricultural land, so that, at least temporarily, there are farms and labourers. As in Adam Smith's time, the neighbourhood of a populous market encourages intensive cultivation.

Even in a purely agricultural Rural District actual work on the land is by no means the sole occupation. In some cases one of the villages is a fairly large shopping centre (e.g., Midhurst in Sussex), while in others the villages depend on the town—often a market town—which gives the District its name. In any case there are in the Rural Districts some transport workers, shop-keepers, blacksmiths or their successors, professional and other services, and usually carpenters and builders. In the more densely populated Rural Districts—those with density over, say, 40 per 100 acres—there are facilities for alternative employment.

In the sequel the results of analyses on these lines for all the Counties, Rural Districts and County Civil Parishes are summarised and discussed, but the methods can be best shown by considering one County in more detail.

LEICESTERSHIRE

This County has both industrial and agricultural development on a considerable scale. It consists of the County Borough of Leicester and the Administrative County, Leicestershire. The latter contains 12 Urban Districts, none of which are large, and 13 Rural Districts, which are divided into 307 Civil Parishes. The chief manufactures of the Borough and the County are hosiery, with allied textile operations, and boot- and shoe-making; but there is also a considerable mining area in the North-West of the County and an important quarrying district North of Leicester.

In the Rural Districts round Barrow-on-Soar, Wigston and Blaby, and Hinckley, respectively North, South and South-West of Leicester, manufacture had developed and some has survived. In these Districts there is also a large and growing suburban population.

LEICESTERSHIRE.

TABLE 1A

	1911		Area 1000 acres	Population 000's	Occupied Males	
					All	Agricultural
					000's	000's
County Borough	8.6	227	71.1	1.3
Urban Districts	37.6	98	32.0	1.7
Rural Districts	486.6	151	49.5	13.7
Total	532.8	476	152.6	16.7
County Borough	1931	..	8.6	239	80.5	1.1
Urban Districts	41.3	122	41.3	1.7
Rural Districts	482.9	181	61.5	11.9
Total	532.8	542	183.3	14.7

TABLE 1B

Number of Occupied Males in Principal Industries

				1931. 000's		
				County Borough and U.D.s	Rural Districts	County Total
Census Groups						
II	Agriculture..	..	..	2.8	11.9	14.7
III	Mines and Quarries	..	..	5.0	7.4	12.4
VII	Metal Industries	..	..	13.0	3.9	16.9
XII	Textile	..	..	9.2	3.2	12.4
XIII	Dress	..	..	15.8	6.4	22.2
XV	Wood	..	..	4.4	2.0	6.4
XVIII	Building	..	..	5.9	3.8	9.7
XXIII	Commerce	..	..	14.6	4.6	19.2
XXV	Professions	..	..	2.6	1.2	3.8
	Others	..	..	48.5	17.1	65.6
Total	..	..	..	121.8	61.5	183.3

TABLE 1c

RURAL DISTRICTS (in descending order of density in 1931)

RURAL DISTRICTS (in ascending order of density in 1931)				Density Persons per 100 Acres 1931	Occupied Males : Agriculture as % of all 1931	Population (00's) in Civil Parishes with Density		
District	Area 100 acres 1931	Population 100 persons 1911 1931				> 100	40-100	100-
				1931	1931	1931	1931	1931
Blaby*	292	191	328	113	9	263	60	5
Hinckley	189	138	169	90	10	123	31	15
Barrow-on-Soar	465	238	309	60	14	216	23	70
Ashby de la Zouch	318	163	175	55	13	88	42	45
Castle Donnington	156	64	65	42	25	0	48	17
Market Bosworth	610	219	235	37	17	65	104	66
Loughborough	202	46	48	24	34	0	19	29
Market Harborough	320	78	75	23	27	31	0	44
Lutterworth	467	99	107	23	32	0	38	69
Billesdon	525	69	111	21	28	51	7	53
Belvoir	179	33	30	17	40	0	0	30
Melton Mowbray†	969	153	147	15	40	20	0	127
Hallaton	137	19	16	12	50	0	0	16
Aggregate	4829	1510	1815	38	19	857	372	586

* Area in 1911, 31,500 acres; Oadby C.P. became an Urban District.

† Area in 1911, 98,200 acres; part became urbanised.

TABLE 1b
URBAN DISTRICTS

	<i>Area</i> 100 acres	<i>Population</i> 100 persons		<i>Density</i> per acre
		1911	1931	
Loughborough	31	230	269	8.7
Coalville	63	185	219	3.3
Hinckley	37	128	160	4.3
Melton Mowbray ..	39	92	104	2.7
Market Harborough ..	48	89	93	1.9
Wigston Magna ..	21	87	114	5.4
Shepshed	54	55	58	1.1
Oadby	22	—	47	2.1
Ashby de la Zouch ..	39	49	51	1.3
Ashby Woulds	19	28	34	1.9
Quorndon	22	24	26	1.2
Thurmaston	18	18	37	2.1

From Table 1A it is seen that a small fraction of Rural Districts was absorbed into towns between 1911 and 1931. The population of each group increased, but that within Leicester itself quite slowly. The environment of Leicester has become more populous with the extension of 'bus and tram facilities and the use of cars. In Leicester the proportion of males in agricultural—more precisely, Land Occupations—is small, and consists of gardeners (market or private), florists and park-keepers. In the Urban Districts the proportion is rather greater, presumably from market-gardens. In the aggregate of Rural Districts the numbers in agriculture have diminished relatively and absolutely, but the number in other occupations has increased.

In Table 1B the relative importance of different industries is shown. Mining is located in the group of Urban Districts and Rural Districts round Coalville. Textile industries, principally hosiery, are centred round Leicester and Hinckley.

We are not concerned here with urban occupations, but Table 1D shows the size of Urban Districts. It is noticeable that the smaller towns have low density; with under 2 persons per acre there is plenty of room for gardens, allotments and market-gardening.

The Rural Districts are arranged in order of density in Table 1C. As was to be expected this order is nearly the same as that of the proportion of agricultural to other employment reversed. For the right-hand of the Table each of the 307 Civil Parishes has been taken separately and classed as having more than 100 persons per 100 acres (when it is ripe to be considered as Urban), between 40 and 100 persons (where there is some urban or industrial influence), or under 40, where occupations on the land or in the service of the agricultural population (including transport, shops, professions) are predominant. The aggregate population in each class is entered for the Rural District as a whole.

Manufacture is considerable in the Districts of Blaby and Barrow; there is some round Market Harborough, and it has developed a

little near Melton Mowbray. Blaby and Barrow are near Leicester and there is some resident population working in Leicester.

The number of Civil Parishes with density over 100 per 100 acres, the population of which is summarised in Table 1c, is 33.

Of these 11 are in *Blaby* R.D. These are Narborough, Oadby, Glenfield, Enderby, Countesthorpe and Blaby itself which were already in the group in 1911, but have increased considerably as residential districts near Leicester or Wigston; of the remaining 5 Lubbethorpe, Leicester Forest E., and Braunston were only agricultural in 1911, while Glen Parva and Croft had densities 70 and 80 respectively. There is a little factory development in some of these regions.

In *Hinckley* R.D. Earl Shilton and Barwell had already densities 200 and 125 respectively in 1911 and Burbage had density 80. These are partly residential for Hinckley and partly no doubt have small-scale industry.

Barrow R.D., which bounds Leicester to the north, had in 1931 9 dense parishes. Sileby and Mountsorrel, where there is quarrying and cement factories, were already populous in 1911, as were the residential districts of Anstey and Syston. Rothley contains an aeroplane factory, Leicester Frith a hospital,¹ Barrow C.P. has textile manufacture, but has grown little since 1911. Birstall (residential) and Gilroes increased rapidly during the 20 years.

The 4 dense parishes in the coal area round *Ashby de la Zouch* are Measham, Oakthorpe, Swannington and Thringstone.

In *Market Harborough* R.D., Fleckney contains a dye-works and Kibworth Beauchamp is conveniently situated on the road and railway between Leicester and Market Harborough and is a populous and densely built village.

In *Billesdon* R.D. Humberstone adjoins Leicester and is a developing residential district, and Evington contains a hospital¹ and is also residential.

In *Melton Mowbray* R.D. Ashfordby has developed a building estate connected with increased manufacture in Melton Mowbray.

Thus those Civil Parishes in which the population exceeds one per acre—a not severe test of density so that only a small proportion of their area is occupied by building—contain in most cases people whose interest and often occupation is in neighbouring towns, while others include mines or quarries, some have small factory or may be cottage industries, and in some hospitals are located. This classification applies to the great majority of dense parishes throughout the country.

Detail similar to that of Table I could be extracted from the Census Reports for every County in England and Wales, but the reasons for density in Rural Districts and Civil Parishes need local knowledge. For example there are some manufacturing industries connected with agriculture, such as those of condensed milk or jam, in small

¹ In country districts scattered through England we find hospitals, schools, barracks and other institutions which have no economic connection with their localities.

towns and in parishes in Rural Districts, and some cottage industries survive. Neither space nor knowledge suffice for more than summary accounts of non-agricultural rural industry.

URBAN AND RURAL AREAS AND POPULATION

Table II shows the distribution of population and area among 13 territorial divisions of England and Wales, distinguishing Urban areas (including County Boroughs and Urban Districts) from Rural. In the right-hand columns are shown the aggregate populations of all the Civil Parishes in which the density was over 100 persons per 100 acres, between 40 and 100, and less than 40.

Some analysis by Counties will be found in later sections and in an Appendix Table, pp. 115-118.

The Territorial Divisions differ slightly from those used in some parts of the Census Reports. Here the 62 Counties are divided as follows:—

<i>South-West</i>	<i>South-East</i>	<i>London</i>	<i>South Midland</i>	<i>West Midland</i>
Cornwall	Southampton	Essex	Bedford	Gloucester
Devon	Isle of Wight	London	Berks.	Hereford
Somerset	Surrey	Middlesex	Bucks.	Shropshire
Dorset	Sussex, West	Herts.	Oxford	Stafford
Wilts.	Sussex, East			Warwick
	Kent			Worcester
<i>East Midland</i>	<i>Eastern</i>	<i>Mid-North</i>	<i>North-East</i>	
Derby	Cambridge	Cumberland	Durham	
Leicester	Ely	Westmorland	Northumberland	
Northampton	Huntingdon	Yorkshire :		
Nottingham	Lincoln :	North Riding		
Peterborough	Holland	East Riding		
	Kesteven			
	Lindsey		<i>North-West</i>	
	Rutland		Cheshire	
	Norfolk		Lancashire	
	Suffolk, East			
	Suffolk, West		<i>Yorkshire</i>	
			West Riding and	
			York	
<i>South Wales</i>	<i>North and West Wales</i>			
Brecknock	Anglesey			
Carmarthen	Carnarvon			
Glamorgan	Denbigh			
Monmouth	Flint			
	Merioneth			
	Montgomery			
	Radnor			
	Cardigan			
	Pembroke			

TABLE II
AREA, POPULATION AND DENSITY, 1911 AND 1931

Territorial Divisions	Area 1000 acres			Population 1000 persons			Density Per 100 acres	Population of Rural C.P. with density		
	Total	Urban	Rural	Total	Urban	Rural	Rural	Over 100	40- 100	Under 40
1911										
S.W. ..	5067	275	4792	1996	1068	928	19	78	156	694
S.E. ..	3424	372	3052	3505	2490	1015	33	210	305	500
London ..	1609	343	1266	7310	6880	430	34	93	129	208
S. Mid. ..	1725	96	1629	885	429	456	28	58	129	269
W. Mid. ..	4012	372	3640	4010	3003	1007	28	268	219	520
E. Mid. ..	2362	264	2098	2113	1432	681	32	232	179	270
East ..	4852	331	4521	1732	863	869	19	40	95	734
Mid. N. ..	3590	232	3358	1183	813	370	11	13	53	304
N.E. ..	1941	164	1777	2067	1541	526	30	341	73	112
N.W. ..	1851	591	1260	5723	5299	424	33	123	134	167
York ..	1777	481	1296	3128	2745	383	30	170	57	156
S. Wales..	1927	308	1619	1737	1341	396	24	132	117	147
N. & W. Wales	3201	198	3003	685	261	424	14	75	68	281
Total ..	37,338	4,027	33,311	36,074	28,165	7,909	24	1,833	1,714	4,526
1931										
S.W. ..	5060	289	4771	2070	1174	896	19	65	169	662
S.E. ..	3427	457	2970	4273	3217	1056	38	244	369	443
London ..	1609	439	1170	8192	7743	449	40	125	137	187
S. Mid. ..	1725	114	1611	1013	552	461	29	79	137	245
W. Mid. ..	4017	424	3593	4528	3600	928	28	228	215	485
E. Mid. ..	2359	284	2075	2374	1598	776	37	346	179	251
East ..	4852	361	4491	1821	971	850	19	28	123	699
Mid. N. ..	3590	251	3339	1280	907	373	11	29	47	297
N.E. ..	1941	195	1746	2243	1735	508	29	334	64	110
N.W. ..	1852	611	1241	6128	5658	470	38	186	128	156
York ..	1780	521	1259	3437	2997	440	35	243	63	134
S. Wales	1927	357	1570	1898	1517	381	24	132	97	152
N. & W. Wales	3202	205	2997	695	288	407	14	79	55	273
Total ..	37,341	4,508	32,833	39,952	31,957	7,995	25	2,118	1,783	4,094

From Table II it is seen that between 1911 and 1931 the Urban Districts (including Boroughs) took 500,000 acres (one seventy-fifth of the area of England and Wales) from the Rural Districts, the principal changes being in the London neighbourhood. The Urban area increased 12 per cent., the Rural area fell about $1\frac{1}{2}$ per cent. Urban population as a whole increased over 13 per cent., Rural also increased but only about 1 per cent.; but while Urban population increased in all Divisions, Rural diminished in the South-West (Cornwall, Wiltshire), in the West Midlands (Worcestershire, Shropshire and Herefordshire), in the East (Huntingdonshire, Cambridgeshire, Suffolk), and in many Counties in Wales.

These administrative changes correspond only roughly to urbanisation in a more general sense. They arise when a great city extends its boundaries to include its suburbs, and the date when this occurs is not related to any definite period of growth, or when a more isolated district has developed manufacturing industry, and has obtained

parliamentary sanction for a change of status. Actually almost any district with a population density of over 100 persons per 100 acres is ripe for a change. Taking the Rural population as analysed in the right-hand columns of the Table, where the numbers show the aggregate population in Civil Parishes in three grades of their density, the population of the highest grade shows a considerable increase (16 per cent.), that of the lowest some decrease (6 per cent.).

The areas in the three grades were approximately :

ENGLAND AND WALES			
		1911	1931
		1000 acres	1931
<i>Rural Districts</i>			<i>Per cent.</i>
Parishes with density			<i>of area</i>
Over 100	.. ..	950	3
40-100	.. ..	2900	8
Under 40	.. ..	29450	77
		<hr/>	<hr/>
		33300	88
<i>Urban</i>	.. ..	4000	12
		<hr/>	<hr/>
England and Wales	..	37,300	100

Thus in 1931 77 per cent. of the area of England and Wales was contained in Civil Parishes with density less¹ than 40 persons per 100 acres, equivalent to 50 or 60 families per square mile, so that the built-up area is very small. The population was about 10 per cent. of the whole population of England and Wales, and was almost solely dependent on rural occupations and services.

In the next grade, density 40 to 100, the average density was 60 in 1931, equivalent to about 80 families to a square mile. In these parishes there is usually some slight overflow of industry or of persons occupied in a neighbouring Urban District, or there is some mining or quarrying, or the parish may contain the shopping centre for a larger district.

Rural Districts contain numbers of Civil Parishes ranging from 1 to perhaps 40; the average number is about 20. Within a Rural District there is often a considerable range of density among the parishes; some of them may contain mines or large quarries, others are almost suburban, others purely agricultural. The distribution of densities of Rural Districts is less dispersed than that of rural Civil Parishes.²

¹ Usually much less, for the average density is less than 15, and the average number of families per square mile is about 20.

² The average Rural District contains about 12,000 persons on 50,000 acres (78 square miles). The average Civil Parish in a Rural District contains about 600 persons on 2,500 acres (about 4 square miles).

During a period a Civil Parish may pass into a higher density grade owing to industrial or residential development,¹ or (in rare cases) to more intensive agriculture, or it may pass into a lower grade owing to diminution of the numbers employed on the land, or (in rare cases) to the closing of a mine or quarry, the completion of some large constructive work or the removal of a barracks. But on the whole the fall in the numbers of the lowest density grade between 1911 and 1931 corresponds to a diminution of the numbers employed on the land.

The relation between residence in a Rural District and occupation on the land is complex and dealt with in the next section.

AGRICULTURAL AND RURAL OCCUPATIONS

Agriculture, including all occupations on the land,² is not confined to Rural Districts, and occupations in Rural Districts are not confined to agriculture. The general position in 1931 can be seen in Table III; in it Columns *A* show the total numbers of males recorded in the Census of 1931 as occupied in each Territorial Division, while Columns *B* show the numbers recorded in agricultural occupations. It is to be remembered that occupation is as recorded by householders on the Census forms, so that all part-time work on allotments is excluded, and if a man has two occupations (as when a village publican has a small holding) it is the principal occupation that is classified.

In Rural Districts as a whole about one-third of the occupied male population was classified as engaged in agriculture. This proportion was exceeded in some Divisions, especially the Eastern, Mid-North and N. and W. Wales, and was far from being reached in the manufacturing and colliery regions.

¹ Including the building of a school, hospital or barracks.

² CENSUS. CLASSIFICATION OF OCCUPATIONS.

	1911	1931
IV. 2	Domestic Outdoor Service	11. Agricultural.
2.3	Domestic Gardeners	010 Land and Estate Agents
VII.	Agriculture.	011 Farmers
	On Farms, Woods and Gardens	012 Relatives assisting
1	Farmers, graziers	013 Gardeners, inc. Domestic; Nurserymen,
2	Farmers' relatives assisting	014 Pupils [Florists]
3	Bailiffs, Foremen	015 Bailiffs
4	Shepherds	016 Foresters and Woodmen
5	Labourers in charge of cattle	017 Machines, Tractors—Proprietors,
6	Labourers in charge of horses	018 Farm Foremen [Attendants]
7	Other Labourers and farm servants	020 Shepherds
8	Woodmen	021 Labourers tending cattle, dairying, etc.
9	Nurserymen, Seedsmen, Florists	022 Labourers in charge of horses
10	Market gardeners, including labourers	023 Labourers not otherwise distinguished
11	Other gardeners, not domestic	030 Gardeners' Labourers
12	Agricultural Machines—Proprietors, Attendants	031 Estate Labourers
13	Others engaged in Agriculture	038 Pea and Fruit Pickers
		039 Other Agricultural Occupations

In Urban Districts with a population less than 50,000 were recorded as many as one-sixth of the whole agricultural population. These include domestic gardeners, nursery gardeners (for vegetables, flowers and seeds), park-keepers, etc., and even some farmers. Nearly 5 per cent. of all occupied in all Urban Districts (under 50,000) were in this group—12 per cent. in the Eastern Counties, 2 per cent. in S. Wales.

In the County Boroughs and large Urban Districts only about 1 per cent. of all occupied were 'agricultural', but the total is not negligible since it accounts for nearly 7 per cent. of agriculturists in England and Wales.

In England and Wales as a whole about one-twelfth of the occupied male population was classed as agricultural in 1931; one-ninth in 1911. A summary comparison between 1911 and 1931 yields:

ENGLAND AND WALES.		Occupied Males.		ooo's		
	1911	B as % of A		1931	B as % of A	
	A	B		A	B	
Boroughs and Urban Districts	8880	268	3.2	10560	260	2.4
Rural Districts	2570	991	38.0	2690	860	31.9
All	11,450	1,259	11.0	13,250	1,120	8.5

TABLE III
AGRICULTURAL AND ALL OCCUPATIONS, 1931

Territorial Divisions*	Population All persons	Occupied Males						Totals	
		County Boroughs†		Other Urban Districts		Rural Districts		A	B
		A	B	A	B	A	B		
South-West	2070	150	4	220	16	300	120	670	140
South-East	4270	400	9	610	35	350	109	1360	153
London, etc.	8200	2240	17	320	20	150	43	2710	80
South Midland	1010	80	2	110	7	150	51	340	60
West Midland	4530	820	8	380	16	310	102	1510	126
East Midland	2370	270	3	270	10	260	51	800	64
East	1820	160	4	160	20	290	155	610	179
Mid.-North	1280	170	1	130	8	130	58	430	67
North-East	2240	320	3	250	5	170	21	740	29
North-West	6130	1240	14	640	23	160	44	2040	81
Yorks. W.	3440†	650	9	370	13	150	25	1170	47
South Wales	1900	230	2	280	5	130	26	640	33
N. & W. Wales	690	0	0	90	6	140	52	230	58
Total	39,950	6,730	76	3,830	184	2,690	857	13,250	1,117

* See p. 103.

† Including also Urban Districts with a population of 50,000 or more.

‡ Including the City of York.

A. All occupations. B. Agricultural Occupations.

In Table IV we come to a more detailed analysis by Counties. The Table relates to Rural Districts only, aggregated in each County, and shows for each County the result of dividing the number of all males occupied by the number in agriculture in 1911 and also in 1931.

Thus for Somerset, which is nearly the median County in this respect, we have in 1911:— *Somerset: All Rural Districts, 1911.*

All occupied Males	..	..	78,413
Occupied in Agriculture	..	..	32,806
$78,413 \div 32,806 = 2.39.$			

The Counties are arranged in descending order of this quotient in 1931.

In the small Rural area in Middlesex the major part of the population is not agricultural. In Durham, Glamorgan, Derby, Yorks. W., Flint, Warwick, Nottinghamshire and Denbigh there are extensive coal-fields or metal works. In Stafford there are also small-scale manufactures. Surrey is largely suburban to London. Leicester, as we have seen, has coal and some manufacture in Rural Districts as well as a suburban element. It is noticeable that in the Rural Districts of Lancashire the industrial population is small; here a number of quite small industrial areas have become Urban Districts, while in the West Riding of Yorkshire some such districts remain Rural.

At the other end of the scale we find the purely agricultural Eastern Counties, such of the Welsh Counties that have neither quarries, coal nor metal industries. Devon is influenced by its stretches of moorland. In Shropshire there is little industry outside the Urban Districts. In the North, Westmorland and Cumberland are mountainous, while in Northumberland there is a contrast between the open sparsely populated North and the industrial neighbourhood of Newcastle.

In the middle group of counties we have typical districts where together with agriculture there is some industry and some suburban element. In Hampshire there are also extensive military regions.

TABLE IV
RATIO OF ALL OCCUPIED MALES TO THOSE OCCUPIED IN AGRICULTURE, ETC.
AGGREGATE OF RURAL DISTRICTS IN EACH COUNTY. *In order of magnitude in 1931.*

	1911	1931		1911	1931		1911	1931
Middlesex	3.4	23.0	Brecknock	3.0	3.2	Westmorland	2.0	2.2
Durham	11.6	15.8	Monmouth	2.5	3.2	Merioneth	2.0	2.2
Glamorgan	10.0	11.5	Essex	2.2	3.1	Shropshire	2.0	2.1
Derby	5.8	7.5	Kent	2.3	3.1	Cambridge	1.7	2.1
Yorks. W.	4.5	6.1	Cheshire	2.6	3.1	Devon	1.9	2.0
Leicester	3.6	5.1	I. of Wight*	3.3	3.0	Suffolk E.	1.8	2.0
Flint	3.8	5.1	Northumberland*	3.5	3.0	Kesteven†	1.7	2.0
Warwick	3.3	4.7	Bedford	1.9	2.8	Anglesey	1.7	2.0
Notts.	3.0	4.4	Sussex W.	2.0	2.7	Pembroke	2.0	2.0
Denbigh	3.4	4.3	Wilts.	2.1	2.7	Norfolk	1.7	1.9
Surrey	3.6	4.1	Somerset	2.4	2.7	Hunts.	1.6	1.8
Stafford	3.4	4.1	Cornwall	2.5	2.6	Lindsey†	1.7	1.8
Bucks.	2.5	3.8	Sussex E.	2.1	2.5	Suffolk W.	1.6	1.8
Gloucester	3.0	3.6	Oxford	1.9	2.5	Cardigan	1.7	1.8
Lancashire	3.2	3.6	Yorks. N.	1.9	2.5	Yorks. E.	1.6	1.8
Carmarthen	3.0	3.5	Dorset	1.8	2.4	Hereford	1.6	1.7
Southampton	2.7	3.4	Rutland	2.2	2.4	Radnor	1.6	1.6
Carnarvon	3.3	3.4	Peterborough	2.0	2.4	Montgomery	1.5	1.5
Herts.	2.4	3.3	Cumberland	2.4	2.4	Ely	1.4	1.4
Berks.	2.5	3.3	Worcester*	3.3	2.2	Holland†	1.4	1.4
Northampton	2.7	3.2						

* In these Counties some populous Rural Districts of 1911 became Urban Districts by 1931; hence the fall in the ratio.

† Parts of Lincolnshire.

NUMBERS OF COUNTIES AND RURAL DISTRICTS

	<i>Ratio</i>	<i>Over 4</i>	<i>3 to 3</i>	<i>2 to 3</i>	<i>1 to 2</i>	<i>Total*</i>
Counties	1911	4	13	22	22	61
"	1931	12	16	20	13	61
Rural Districts	1931	166	79	225	179	649

*Excluding London, which has no Rural Districts.

In 1931 the ratio was over 4 in 12 Counties, that is, for one man or boy on the land in Rural Districts more than 3 were otherwise occupied; in 16 more Counties it was over 3, and in 20 over 2. Only in 13 Counties did agriculture employ the majority who were recorded as occupied; in the 649 Rural Districts the corresponding ratio is larger.

In 1911¹ the principal industries were as follows:—

ENGLAND AND WALES, 1911. AGGREGATE OF RURAL DISTRICTS.

<i>Occupied Males 000's</i>	
Agriculture	991
Government	33
Defence	35
Professions	60
Domestic	96
Commerce	57
Transport	167
Mines and Quarries	335
Metal Products	161
Building, Contracting	192
Woodwork	24
Bricks, Pottery	28
Textiles	40
Dress	50
Food	104*
Drink	34
Tobacco	1†
Others	165

Total 2,573

* Including dealers (grocers, butchers, dairymen, etc.). † Including tobacconists.

AGE AND OCCUPATION

Table V affords a summary view of change in the numbers occupied in agricultural and other land occupations² from 1911 to 1931, and in Table VI³ some comparable information is given for earlier years. While the total occupied population has increased without interruption for, at least, many decades, the numbers engaged in agriculture have fallen, with an exception in 1911, and the proportion they form of all occupations has diminished rapidly.

The changes prior to 1911 were discussed in my earlier paper. Here only the period 1911 to 1931 is under consideration.

In Table VA the Population Censuses are used. Here occupations are those declared by householders and include persons temporarily out of work and, possibly, in the highest age group some who are practically retired. While the total numbers of males and of females have fallen by nearly equal steps in the two decennial periods, the number of males over 65 years has actually increased, and the steepest fall is in the youngest age-group.

¹ No summary of the occupations in all Rural Districts in 1931 has been published.

² Domestic gardeners are included throughout.

³ In part reproduced from the former article in the *Statistical Journal*, 1914.

It is possible that the figures for some occupations in 1921 are a little inflated, since the Census was taken in June (instead of April) that year and some casual workers may have been temporarily on the land.¹

There has been considerable variation between the occupations.

	1911	1921 ooo's	1931
<i>Males</i>			
Farmers (line 1)	209	245	231
Gardeners (line 10)	259	221	267
Farm workers (lines 4-7)	643	560	477
All others	148	145	142

Here gardeners include domestic gardeners.

It is seen that over the 20 years the loss is confined to farm workers, except (in more detail) that there is a diminution in the number of farmers' sons and other male relatives.

TABLE V A
AGRICULTURAL OCCUPATIONS
ooo's
1911

	<i>Age's</i> <i>Under 25</i>	<i>Males</i> <i>25-65</i>	<i>65-</i>	<i>Males</i> <i>All</i>	<i>Females</i> <i>All</i>
1. Farmers	4	172	33	209	20.0
2. Relatives	58	39	1	98	56.9*
3. Bailiffs	1	19	2	22	—
4. Shepherds	4	15	2	21	—
5. Cattlemen	29	38	2	69	4.9*
6. Horsemen	53	73	2	128	—
7. Labourers	144	240	41	425	8.3
4-7. Total	230	366	47	643	13.2
8. Machines	1	6	0	7	0.1
9. Woodmen	2	9	1	12	—
10. Gardeners	62	173	24	259	4.3
11. Others	2	6	1	9	.4*
Total	360	790	109	1259	95

1921

	<i>Age's</i> <i>Under 25</i>	<i>Males</i> <i>25-65</i>	<i>65-</i>	<i>Males</i> <i>All</i>	<i>Females</i> <i>All</i>
1. Farmers	9	204	32	245	19.4
2. Relatives	51	28	1	80	15.4*
3. Bailiffs	1	21	2	24	0.2
4. Shepherds	1	9	1	11	0.4
5. Cattlemen	20	37	2	59	10.6*
6. Horsemen	41	70	3	114	0.3
7. Labourers	131	209	36	376	21.4
4-7. Total	193	325	42	560	32.7
8. Machines	3	8	—	11	0.2
9. Woodmen	1	9	1	11	—
10. Gardeners	45	147	29	221	6.5
11. Others	8	9	2	19	8.6*
Total	311	751	109	1171	83

¹ Pea and fruit pickers accounted for 1,300 males and 3,400 females in 1921; the numbers were negligible in other years.

	1931			Male, All	Female, All
	Ages Under 25	Males 25-65	65-		
1. Farmers	5	192	34	231	17.4*
2. Relatives	42	30	1	73	8.2
3. Bailiffs	2	17	2	21	0.2
4. Shepherds	1	8	1	10	—
5. Cattlemen	19	41	2	62	6.5*
6. Horsemen	20	48	2	70	0.1
7. Labourers	114	189	32	335	11.1
4-7. Total	154	286	37	477	17.7
8. Machines	1	7	0	8	—
9. Woodmen	0	9	1	10	—
10. Gardeners	56	177	34	267	7.9
11. Others	9	18	3	30	4.4*
Total	269	736	112	1117	56

Note to Table. There must have been some change in classification for the entries for females marked *. It is probable that the line 2 at each date (sons, daughters and other relatives assisting in the work of the farm) included some in special work and others in general work. Thus in 1911 dairymaids were probably in line 2 and in 1921 and 1931 in line 5.

TABLE Vb
WORKERS ON AGRICULTURAL HOLDINGS OF MORE THAN 1 ACRE, JUNE 1921 TO 1939.
000's

	MALES			Total	FEMALES		
	Regular	Casual	Under 21 years		Regular	Casual	Total
1921	612	131	182	743	73	53	126
1922*	—	—	—	—	—	—	—
1923	566	104	164	670	59	43	102
1924	582	115	167	697	62	47	109
1925	579	115	161	533	60	49	109
1926	581	109	155	535	63	42	105
1927	587	85	152	520	63	40	103
1928	583	87	140	530	68	35	103
1929	577	91	137	531	67	35	102
1930	564	80	129	515	65	32	97
1931	552	72	126	498	64	29	93
1932	535	74	125	484	62	26	88
1933	536	90	125	501	60	30	90
1934	522	82	116	488	53	31	84
1935	518	77	114	481	50	28	78
1936	502	66	109	459	44	28	72
1937	490	65	102	453	46	31	77
1938	471	54	96	429	41	26	67
1939	470	63	101	432	40	33	73

* Figures not available.

The increase in the number of farmers between 1911 and 1921 may be partly attributed to the settlement on the land of some men returned from the war.

For women and girl workers there has evidently been a change in classification between 1911 and the later Censuses. The fall in their total is relatively greater than that for all males, and is comparable with that for males under 25 years. Possibly women on farms are less willing to be occupied, or to call themselves occupied, after marriage. Analysis by age and marital condition would throw more light on this. At all periods presumably many farmers' daughters left for work in towns after a few working years on the farms.

In June each year, beginning in 1921,¹ the Ministry of Agriculture and Fisheries obtains, as part of a general farm Census, statements of the numbers of workers on agricultural holdings of more than 1 acre. The results are shown in Table VB. This will include part of the numbers classed as gardeners in Table VA, namely those employed by market-gardeners. It excludes farmers and farmers' wives, but includes other relatives. Further there is a division between regular workers and casual workers, and since the statistics are obtained in June the number of the latter is considerable. As in 1921 the Population Census was taken in June, a casual farm-worker in that month might class himself as agricultural or as in some other occupation which he followed more regularly when at work.² In April, 1931 (the date of the later Census) casual work on farms is less common.

Under these circumstances little agreement can be expected between the totals in Tables VA and VB. They are not necessarily inconsistent, but cover different categories, and are difficult to reconcile. The importance of VB is that it indicates that the tendency between 1921 and 1931 continued to 1938. The importance of VA is that it shows that the diminution of all land occupations together was much less than that for the groups selected in VB, viz., 81,000 against 152,000.

In Table VI a comparison is made between the numbers of men and boys in all occupations in England and Wales over 70 years and two groupings of agricultural occupations. The figures up to 1911 are from an earlier paper, and it was not practicable to carry back the statistics of all agricultural occupations to an earlier date. It is customary in discussions about the decrease of the farming population to emphasise the falling off of the number of labourers on farms; these are shown for the whole period.

A little study of the Table will show that the proportion of men and boys between 15 and 25 to all farm labourers and shepherds has remained in the neighbourhood of one to three from 1861 to 1931, but fell a little after 1911, as was the case for all occupied on the land.³ (Boys under 15 are ignored throughout the Table.)

We come to closer quarters with the problems of the amount and numerical cause of the change in age distribution in Table VII, which is computed from Table VI.

The number in one Census in any age group is related to the number in the group 10 years younger at the previous Census, being less than it owing to deaths and to transference to other industries (in the

¹ But excluding 1922.

² At Perugia a great number of the young men occupied in the town take an active part in the wheat harvest.

³ The ratios, excluding those over 65 years, are:—

Year		1861	Males 15-25 as per cent of Males 15-65						
			'71	'81	'91	'01	'11	'21	'31
All occupations	..	.. 32	31	31½	32½	31	28	26½	25
Farm labourers, etc.	..	.. 33	34	37	38	35	35½	32	34.
All agriculture	..	.. —	—	—	—	—	29	27½	25½

TABLE VI
OCCUPIED MALES IN ENGLAND AND WALES, 1861 TO 1931.

Date	Age groups 000's						Totals	
	15-25	25-35	35-45	45-55	55-65	65-75	15-65	15-75
<i>All occupied</i>								
1861	1800	1380	1125	835	555	—	5695	—
1871	1965	1569	1214	947	624	—	6319	—
1881	2224	1797	1379	1020	648	—	7068	—
1891	2617	2049	1571	1142	690	—	8069	—
1901	2910	2443	1889	1341	808	—	9391	—
1911	2981	2793	2296	1639	972	389	10681	11070
1921	2939*	2585*	2240	2063	1265	494*	11092	11586
1931	3143	3016	2467	2226	1606	532	12458	12990
<i>Agricultural Labourers and Shepherds</i>								
1861	294	191	164	134	107	—	890	—
1871	251	148	131	118	92	—	740	—
1881	256	132	108	107	87	—	690	—
1891	237	129	97	90	76	—	629	—
1901	182	102½	93	76½	64	—	518	—
1911	201	118	97	88	64	40	568	608
1921	151*	92†	84	80	68	38*	475	513
1931	145	96	66	65	59	33	431	464
<i>All Agricultural and Gardening Occupations</i>								
1911	323	233	215	195	146	89	1112	1201
1921	287*	192†	196	200	163	81*	1038	1119
1931	251	209	176	182	169	95	987	1082

* These entries are approximate, since the age grouping below 25 and above 65 years differed in the 1921 Census from the others and some interpolation was necessary.

† The age group 25-35 in 1921 was specially affected by losses in the 1914-18 war.

case of agriculture) and to emigration, while there might be some compensation in some influx from other industries.

In Table VII we follow the fortunes of, e.g., the generation born in the period 1846 to 1856. These are found in the age-group 15-25 in 1871, in the group 25-35 in 1881 and so on. Thus in all occupations this group started with 1,965,000 males; 10 years later (diagonally down Table VI) there were 1,797,000. The survivor ratio shown in the first entry of Table VII is $1,797 \div 1,965 = .91$. All the entries in Table VII are computed on this plan.¹

It is seen that for all occupations the reduction is slow up to 55 years and thereafter rapid. But for agricultural labourers the reduction is much greater from below to above 25 years, indicating that boys who started on the land left for other work.

In the higher age-groups the agricultural ratio is nearer that for all occupations and in the highest exceeds it.

The loss at or before the age 25 in farm-labourers varies from one Census to another. It was specially great in the periods 1891 to

¹ Between 1921 and 1931 there appears to be an increase between 15.25 and 25.35, owing no doubt to resettlement after the 1914-18 war.

1901 (survivors' ratio .43) and 1911 to 1921 (ratio .46), and much smaller in the periods 1901-11, and 1921-31 (ratios .65 and .64), though the loss even then was considerably more than in other occupations.

TABLE VII
OCCUPIED MALES: ENGLAND AND WALES.
SURVIVORS' RATIO

<i>Dates of birth</i>	<i>Age Groups</i>				
	15-25 <i>to</i> 25-35	25-35 <i>to</i> 35-45	35-45 <i>to</i> 45-55	45-55 <i>to</i> 55-65	55-65 <i>to</i> 65-75
1846-56	<i>Censuses 1871-81</i>	'81-'91	'91-'01	'01-'11	'11-'21
	All .91	.87	.85	.72	.51†
	Labourers .53	.73	.78	.83	.59†
1856-66	<i>Censuses 1881-91</i>	'91-'01	'01-'11	'11-'21	'21-'31
	All .92	.92	.87	.77	.42†
	Labourers .50	.72	.95	.77†	.49†
1866-76	<i>Censuses 1891-'01</i>	'01-'11	'11-'21	'21-'31	
	All .93	.94	.90†	.78	
	Labourers .43	.91	.86†	.74	
1876-86	<i>Censuses 1901-'11</i>	'11-'21	'21-'31		
	All .96	.80*	.99		
	Labourers .65	.72*	.78		
1886-96	<i>Censuses 1911-'21</i>	'21-'31			
	All .87*	.95			
	Agriculture .59*	.91			
	Labourers .46*	.71			
1896-06	<i>Censuses 1921-'31</i>				
	All 1.03*				
	Agriculture .73*				
	Labourers .64*				

* Affected by the 1914-18 war.

† A little doubtful owing to change in the age classification between 1911 and 1921.

SUMMARY

1. It is necessary to distinguish between the Rural Population and the Agricultural Population. The Population in Rural Districts increased 1 per cent. between 1911 and 1931; the number of males engaged in agricultural and other land occupations fell about 11 per cent.

2. In Rural Districts, besides those working on the land, there is always a number engaged in transport and services necessary in any population, often some small industry and quarrying and in some areas extensive coal mining; in the neighbourhood of large towns there is an overflow of urban population. In only 29 per cent. of the Rural Districts did agriculture employ the majority of occupied males in 1931.

3. A convenient way of analysing rural population is by the density of population. If the density is less than 30 per 100 acres, the region is purely rural; if it is over 100 per 100 acres, it is definitely urban, but unless it exceeds this density considerably it has a perceptible agricultural or gardening constituent. In 1931 more than 23 per cent. of the males classed as agricultural were in Urban Districts or Boroughs. With a density intermediate between 30 and 100 there is some element of suburban, mining or industrial influence, but agriculture is one of the principal occupations.

4. The area in Administrative Rural Districts decreased only by one-sixtieth between 1911 and 1931 owing to the extension of towns, but there is also a small (only too visible) encroachment of houses into Rural Districts. Off the main roads England and Wales are predominantly rural. Urban Districts (including Boroughs) occupy only 12 per cent. of the area.

5. There has been a great and nearly continuous fall in the number of farm labourers, but this has been checked (when all land occupations are considered) by an increase in the number of farmers and of market and other gardeners, and a much slighter fall in other land occupations. There appears to have been some influx into land occupations between 1911 and 1921, but from 1921 to 1939 the fall continued.

6. A considerable number of boys who start work on farms go into other industries before they are 25 years, but this is no new phenomenon, and the proportion of those between 15 and 25 and all in agriculture changed little in 70 years.

APPENDIX

AREA, POPULATION AND DENSITY, 1911 AND 1931.

TABLE II. DETAIL.

1911

County	AREA 1000 acres			POPULATION 1000 persons			DENSITY per 100 acres Rural	POPULATION OF RURAL CIVIL PAR- ISHES with density		
	Total	Urban	Rural	Total	Urban	Rural		Over 100	40- 100	Under 40
Cornwall	868	56	812	328	144	184	23	20	50	114
Devon	1671	131	1540	700	473	227	15	11	18	198
Somerset	1038	42	996	458	208	250	25	37	51	162
Dorset	626	21	605	223	118	105	17	3	13	89
Wilts	864	25	839	287	125	162	19	7	24	131
Southampton ..	959	66	893	862	633	229	25	30	70	129
I. of Wight	94	7	87	88	57	31	36	—	—	31
Surrey	462	115	347	846	623	223	67	97	83	43
Sussex W.	402	13	389	176	83	93	24	4	24	65
Sussex E.	531	50	481	487	361	126	25	5	20	101
Kent	976	121	855	1046	733	313	37	74	108	131

APPENDIX, 1911—*cont.*

County	Area 1000 acres			POPULATION 1000 persons			DENSITY per 100 acres Rural	POPULATION OF RURAL CIVIL PARISHES with density Over 40— Under 100		
	Total	Urban	Rural	Total	Urban	Rural		Over 100	40-100	Under 40
Essex	980	115	865	1351	1086	265	31	44	71	150
Middlesex	75	27	48	1126	1078	48	100	32	14	2
Herts.	405	52	353	311	194	117	33	17	44	56
London	149	149	0	4522	4522	—	—	—	—	—
Bedford	303	16	287	195	117	78	27	5	19	54
Berks.	462	16	446	271	133	138	31	21	50	67
Bucks.	479	39	440	220	80	140	31	25	45	70
Oxford	481	25	456	199	99	100	22	7	15	78
Gloucester	806	57	749	736	507	229	30	69	48	112
Hereford	539	16	523	114	40	74	14	0	3	71
Shropshire	862	47	815	246	110	136	18	3	20	113
Stafford	745	119	626	1348	1139	209	33	66	55	88
Warwick	581	72	509	1040	873	167	32	44	53	70
Worcester	479	61	418	526	334	192	46	86	40	66
Derby	650	95	555	683	411	272	50	137	79	56
Leicester	533	46	487	477	326	151	31	46	41	64
Northampton	585	43	542	304	186	118	22	9	31	78
Nottingham	540	78	462	604	475	129	28	40	24	65
Peterborough	54	2	52	45	34	11	22	0	4	7
Cambridge	315	6	309	128	52	76	25	5	8	63
Ely	238	57	181	70	37	33	18	0	0	33
Huntingdon	234	30	204	56	24	32	15	0	0	32
Holland	269	46	223	83	37	46	21	4	0	42
Kesteven	466	23	443	111	44	67	15	2	2	63
Lindsey	970	58	912	370	228	142	15	11	11	120
Rutland	97	2	95	21	4	17	17	0	3	14
Norfolk	1315	53	1262	499	238	261	21	8	45	208
Suffolk E.	557	36	521	277	155	122	23	10	16	96
Suffolk W.	391	20	371	117	44	73	20	0	10	63
Cumberland	973	64	909	266	165	101	11	9	21	71
Westmorland	505	31	474	64	27	37	8	1	4	32
Yorks. N.	1362	98	1264	420	283	137	11	2	20	115
Yorks. E.	750	39	711	433	338	95	13	1	8	86
Durham	649	90	559	1370	969	401	72	298	62	41
Northumberland	1292	74	1218	697	572	125	10	43	11	71
Cheshire	656	112	544	955	772	183	33	53	51	79
Lancashire	1195	479	716	4768	4527	241	33	70	83	68
Yorks. W.	1777	481	1296	3128	2745	383	30	170	57	150
Flint	103	13	150	93	35	58	39	13	26	19
Denbigh	426	22	404	145	49	96	24	49	8	39
Carnarvon	366	29	337	125	58	67	20	8	24	35
Anglesey	177	12	165	51	19	32	19	1	6	25
Merioneth	422	55	367	45	20	25	6	2	0	23
Montgomery	510	41	469	53	19	34	7	0	0	34
Radnor	301	8	293	23	6	17	6	1	0	16
Cardigan	443	8	435	60	16	44	10	1	1	42
Pembroke	393	10	383	90	39	51	13	0	3	48

APPENDIX, 1911—*cont.*

County	Area 1000 acres			POPULATION 1000 persons			DENSITY per 100 acres Rural	POPULATION OF RURAL CIVIL PAR- ISHES <i>with density</i>		
	Total	Urban	Rural	Total	Urban	Rural		Over 100	40- 100	Under 40
Carmarthen	589	15	574	160	60	100	17	3	32	65
Brecknock	469	7	462	60	18	42	9	0	18	24
Glamorgan	519	193	326	1121	915	206	63	125	51	30
Monmouth	350	93	257	396	348	48	30	4	16	28

1931

Cornwall	868	59	809	320	146	174	21	9	53	112
Devon	1671	131	1540	733	505	228	15	16	22	190
Somerset	1037	48	989	475	244	231	24	18	54	159
Dorset	623	22	601	239	134	105	17	8	18	79
Wilts.	861	29	832	303	145	158	19	14	22	122
Southampton	962	84	878	1014	756	258	29	56	83	119
I. of Wight	94	8	86	89	58	31	35	3	16	12
Surrey	462	149	313	1181	998	183	58	58	99	26
Sussex W.	402	19	383	223	115	108	28	18	28	62
Sussex E.	531	64	467	547	412	135	30	14	24	97
Kent	976	133	843	1219	878	341	40	95	119	127
Essex	980	161	819	1755	1475	280	34	64	76	140
Middlesex	149	133	16	1639	1590	49	322	43	6	0
Herts.	405	70	335	401	281	120	36	18	55	47
London	75	75	0	4397	4397	—	—	—	—	—
Bedford	303	23	280	221	142	79	28	9	21	49
Berks.	464	25	439	311	169	142	32	28	48	66
Bucks.	479	40	439	271	124	147	33	39	49	59
Oxford	479	26	453	210	117	93	22	3	19	71
Gloucester	805	61	744	786	562	224	30	65	57	102
Hereford	539	16	523	112	41	71	13	0	4	67
Shropshire	862	48	814	244	115	129	16	5	15	109
Stafford	738	128	610	1431	1219	212	35	74	56	82
Warwick	625	119	506	1535	1347	188	37	80	39	69
Worcester	448	52	396	420	316	104	26	4	44	56
Derby	648	100	548	757	459	298	55	175	68	55
Leicester	533	50	483	542	360	182	38	86	37	59
Northampton	585	46	539	310	195	115	22	12	32	71
Nottingham	540	78	462	713	540	173	37	73	41	59
Peterborough	53	10	43	52	44	8	19	0	1	7
Cambridge	315	5	310	140	67	73	24	0	13	60
Ely	238	83	155	78	45	33	21	0	1	32
Huntingdon	234	30	204	56	26	30	15	0	2	28
Holland	269	46	223	92	41	51	23	0	4	47
Kesteven	463	20	443	110	42	68	15	4	2	62
Lindsey	973	65	907	422	287	135	15	2	12	125
Rutland	97	2	95	17	3	14	15	0	2	12
Norfolk	1315	54	1261	505	244	261	21	13	54	194
Suffolk E.	557	36	521	295	175	120	23	9	23	88
Suffolk W.	391	20	371	106	41	65	21	0	10	55

APPENDIX 1931—*cont.*

Country	Area 1000 acres			POPULATION 1000 persons			DENSITY per 100 acres Rural	POPULATION OF RURAL CIVIL PAR- ISHES with density		
	Total	Urban	Rural	Total	Urban	Rural		Over 100	40- 100	Under 40
Cumberland	973	67	906	263	172	91	10	4	15	72
Westmorland	505	32	473	65	29	36	8	1	3	32
Yorks. N.	1362	108	1254	469	320	149	12	17	22	110
Yorks. E.	750	44	706	483	386	97	14	7	7	83
Durham	649	107	542	1486	1082	404	75	313	52	39
Northumberland ..	1292	88	1204	757	653	104	9	21	12	71
Cheshire	652	118	534	1088	882	206	39	85	46	75
Lancashire	1200	493	707	5040	4776	264	37	101	82	81
Yorks. W.	1780	521	1259	3437	2997	440	35	243	63	134
Flint	164	15	149	113	47	66	44	22	24	20
Denbigh	428	24	404	158	58	100	25	52	9	39
Camraron	364	29	335	121	64	57	17	3	15	39
Anglesey	177	12	165	49	18	31	18	1	4	26
Merioneth	422	55	367	43	20	23	6	0	2	21
Montgomery	510	41	469	48	17	31	6	0	0	31
Radnor	301	8	293	21	6	15	5	0	0	15
Cardigan	443	8	435	55	17	38	9	1	0	37
Pembroke	393	13	380	87	41	46	12	0	1	45
Cardarthen	588	15	573	179	75	104	18	21	25	58
Brecknock	469	7	462	58	17	41	9	0	18	23
Glamorgan	520	235	285	1226	1045	181	64	96	43	42
Monmouth	350	100	250	435	380	55	22	15	11	29

The Classical View of the Economic Problem

By Hla MYINT

THERE seems to be a fundamental inconsistency in the currently accepted opinions concerning the classical economists. We have been brought up on the belief that their main concern is to show that the equilibrium process of the free market will lead to a more efficient allocation of resources among different industries than state interference.¹ On the other hand, we have been frequently told that the classical analysis is vitiated by the Labour theory which conceives the economic problem as the struggle of man to transform resources given by nature into material wealth. It has been said that the classical economists confuse the "economic problem," which consists in the choice between alternative methods of using given resources to maximise the satisfaction of given consumers' wants, with the "technical problem" of physical productivity; and that consequently they are guilty of a "materialist bias" (Cf., Robbins, *Nature and Significance of Economic Science*, chs. 1-3).

These two opinions are held simultaneously and implicitly by many economists and it will be seen that they are inconsistent with each other. The first credits the classical economists with an essentially correct, if rather rough, solution of the problem of allocating scarce resources which, according to the second, they understand only imperfectly.

This inconsistency is fundamental, for the two opinions attribute to the classical economists two entirely different outlooks on the nature of the central economic problem.

When we say that the central problem of the classical economists is to allocate resources efficiently among different industries, we imply (i) that they start from the assumption of a given quantity of resources and (ii) that they are mainly concerned with the maximisation of consumers' wants as expressed by their market demands for different commodities. In short we attribute to them what is known as the "scarcity" concept of the economic problem. The efficiency of the allocation of resources among competing uses cannot be judged except on the assumption of a given quantity of scarce resources and in terms of quantities of consumers' satisfaction.

On the other hand, the Labour theory suggests an entirely different outlook on the economic problem. It starts from a fundamental

¹ For recent examples of this belief see A. P. Lerner's *Economics of Control*, p. 67, and T. de Scitovszky "A Note on Welfare Propositions in Economics," *Review of Economic Studies*, November 1941, pp. 77-8.

contrast between land or natural resources, given once for all, and labour which is augmentable. Further, the problem of equilibrium adjustments to the consumers' demand is faded out and the analysis is largely confined to the physical level. Thus the amount of material wealth can be increased, either by raising the physical productivity of labour or by increasing the supply of labour.

The problem now is to determine which of the two view-points, the "scarcity" concept of the economic problem or the labour-theory outlook, should be regarded as the central principle which unifies the different aspects of classical economic thought into a coherent whole. In what follows it will be argued that the method of regarding the problem of allocating resources as the main concern of the classical economists fails to provide such a central unifying principle, as it fails to explain a formidable array of things which are undoubtedly characteristic features of classical thought. It fails to explain, for instance, the classical "materialist bias" as typified by J. S. Mill's concept of the "economic man" and also the classical economists' preoccupation with the problem of capital accumulation which developed into the celebrated controversy over Malthus's Glut theory. It will be argued further that once we have learnt to steep ourselves in the labour-theory outlook and to regard the "allocative" problem as a subsidiary theme, all these apparently puzzling features sort themselves out into a coherent pattern and that this pattern is very different from what we normally understand by the "familiar tenets of the classical school".

I

What then is the outlook on the economic problem suggested by the labour theory? In its simplest form, the labour theory depicts a primitive agricultural community, self sufficient, and having only a rudimentary system of exchange. In this setting it is natural to look upon production as the struggle of man against nature and to measure wealth in terms of the physical product of labour. This is the starting point of Adam Smith's analysis; from it he proceeded on the assumption that the more complicated structure of a developed economy may be reduced in its essential features to this basic model of the "early and rude state of society". Thus he tried to show that behind the "veil of money" and complex relations of trade and industry, the essential nature of economic life remained the same; that it consisted in the physical process in which commodities were annually produced and consumed. From this he derived his basic criterion of economic policy: it must be favourable to the greatness of the annual produce of labour.

In the "Introduction and Plan" to the *Wealth of Nations* Smith laid down two major determinants of the size of the annual produce or the national dividend: (i) "the skill, dexterity and judgment with which its labour is generally applied" and (ii) "the proportion

between the number of those who are employed in useful (or productive) labour and those who are not so employed". Smith's conception of the economic problem in a developed economy may be best understood by following up these two determinants.

(i) The first way in which the primitive economy may develop is by opening itself up for trade ; by extending the area of the market and division of labour either within its own national boundary or beyond it. Starting from a technical concept of production as the transformation of natural resources into physical products, Smith was impressed by the striking possibilities of increasing productivity by the division of labour. He put it down as the most potent method of increasing the size of the national dividend (*Op. cit.*, Cannan ed., vol. I, p. 5).

At this point it may be pointed out that one of the most powerful considerations behind Smith's desire for free trade is not the purely subjective consumers' gains from free exchange. He desired free trade mainly because it increases physical productivity by widening the scope of the division of labour and by bringing in fresh natural resources into the framework of production. Thus subjective gains apart, free trade is desired because it increases the annual produce of a country's labour even when considered at the purely physical level. In other words, free trade is a method of expanding the economic system horizontally so as to reap the advantages of increasing physical returns brought about by overcoming the technical indivisibilities of production (Cf., Allyn Young, "Increasing Returns and Economic Progress," *Economic Journal*, 1928). Perhaps one may say that the difference between the modern concept of free competition and Smith's is that the former is a method of "tightening up" the allocative efficiency within a given productive framework while the latter is a method of "widening" the area of the economy.

This does not, however, mean that Smith did not know of the existence of the subjective consumers' gains in the modern sense. In analysing the mechanism of exchange which accompanies the division of labour, he became aware of the fact that on top of the increase in physical productivity there was a further class of gains: "It gives a value to their superfluities by exchanging them for something else which may satisfy a part of their wants and increase their enjoyments" (*Ibid.*, p. 413). But this transition to the subjective level of analysis is neither clear-cut nor sustained and some of the modern interpreters are going too far when they would have us believe that Smith's central problem was to maximise the satisfaction of consumers' wants as expressed by their market demands for different commodities (e.g., M. Bowley, *Nassau Senior and the Classical Economists*, p. 67).

Perhaps a more balanced assessment of Smith's opinions on this point may be stated as follows. He would of course agree that the final aim of all production is consumption and that in the ultimate analysis wealth must consist in quantities of consumers' satisfaction.

But he seems to assume implicitly that under normal conditions, i.e., in the absence of shortage or glut, the consumers' satisfaction from a commodity may be regarded as depending on its "value-in-use" as determined by its intrinsic physical properties. This amounts to assuming that quantities of satisfaction are roughly proportional to quantities of physical products. Granted this first approximation, he went on to develop the bulk of his analysis on the assumption that more substantial additions to the wealth of a nation could be made by increasing the volume of physical output rather than by making refined adjustments to the consumers' preference positions on the basis of a given volume of products. Thus, the allocative problem became a subsidiary theme and however far Smith might have leant towards the demand approach, he could confine himself to the physical level of analysis suggested by his initial labour-theory outlook. In the exchange economy, as in the primitive economy, the first major determinant of the size of the annual produce is the technical conditions governing the physical productivity of labour.

(ii) The second major determinant of the wealth of the nation, according to Smith, is the proportion in which its labour is used between "productive" and "unproductive" purposes. Without entering into a detailed discussion of the meaning of "productive" labour, we may broadly define it as that labour used for investment purposes.¹ Now, in Smith's time, fixed or durable capital played only a very small part in economic life and the bulk of investment was in the form of circulating capital or "advances to labour". Thus broadly speaking, "productive" labour may be regarded as that labour which produces material necessities or wage goods which enable society to maintain a greater quantity of labour for future production. An increase in saving thus increases the size of the wage fund which raises wages above the subsistence level and stimulates the growth of population. Thus the greater the proportion of resources used in "productive" purposes, the greater will be the supply of labour available to society.

This again accords with the labour-theory outlook, which starts from a fundamental contrast between land, the passive and non-augmentable factor, and labour the active and augmentable factor. Given the natural resources and average productivity of labour, the size of the national dividend may be regarded as being determined by the major variable, the supply of labour. Thus the second way in which our initial model of the primitive economy may develop is to expand itself vertically, by increasing its capital accumulation and population.

The two methods of increasing the size of the national dividend, horizontally by widening the area of the market and the division of labour and vertically by increasing the supply of labour, are complementary and not competitive. However, Smith seems to think capital

¹ Cf. my article "The Welfare Significance of Productive Labour," *Review of Economic Studies*, Winter, 1943.

accumulation is the more important mainspring of economic progress. Without capital accumulation, division of labour cannot be carried out to any considerable extent and the new investment opportunities offered by a greater freedom of trade cannot be fully utilised. On the other hand, a mere increase in capital accumulation resulting in an increase in population by itself can open up enormous scope for increasing returns for labour, not only due to the "abridging of labour" by machinery, but also due to the overcoming of technical indivisibilities. Here, not having a clear idea of the principle of diminishing returns from land, Smith appears to think that a mere increase in population will increase the productivity of labour. Comparing society to a private workshop, Smith wrote: "The greater their number, the more they naturally divide themselves into the different classes and sub-divisions of employment" (*Ibid.*, p. 88).

To sum up: the labour-theory outlook systematically shifted Smith's focus of attention from the problem of allocating *given* resources among different industries to maximise the consumers' satisfaction to the problems of increasing the physical productivity of labour and the total volume of economic activity. The subjective level of analysis was pushed to the background by the broad assumption that quantities of consumers' satisfaction are roughly proportional to the quantity of physical product. The assumption of a given quantity of resources was undermined by Smith's interest in the possibilities of increasing the national dividend by increasing the degree of the division of labour and the total supply of labour.

II

After Adam Smith, the classical outlook on the economic problem moved further and further away from the problem of allocating given resources efficiently among different industries. It is true that J. B. Say, a notable disciple of Smith, made important advances in the demand approach and even initiated a minor tradition of the marginal utility and productivity analysis which included such considerable figures as Montifort Longfield and Nassau Senior (Cf., M. Bowley, *op. cit.*, ch. 2, secs. v and vi). But these economists exerted little influence on the main stream of classical economic thought. Malthus also might be regarded as a demand economist. But again his interest was centred on the influence of the total Effective Demand on the volume of employment and not on the allocative mechanism of relative demand for particular products in different markets. To him the wastages due to the collapse of general economic activity and the "glut" were overwhelmingly more important than wastages due to the mal-distribution of resources. When however we come to the main stream of classical economic thought dominated by the Ricardian tradition we find the physical output approach of the labour theory firmly established almost to a complete neglect of the allocative problem. It continued to be so until the "marginal revolution".

It is significant that the development of economic thought after Adam Smith should be given its initial impetus by a simultaneous discovery of the principle of diminishing returns from land by many economists, notably by West, Anderson and Malthus. This discovery was brought to a head by government enquiries into the state of British agriculture. But even without that external stimulus, it would probably have been discovered since it is the next step of generalisation to be arrived at by the logic of the man-against-nature view of the economic problem. It laid down a basic relation between the constant factor, land, and the variable factor, labour, and set a determinate limit to the process in which additional doses of labour can be applied to a given quantity of natural resources.

Perhaps the way in which this development affected the classical analysis can be illustrated by adopting the expository device suggested by Smith, viz., to regard society as one giant firm, employing one main type of variable factor, labour, and producing a single "commodity", which we may call "corn" after Ricardo, meaning by it a more or less homogeneous physical mass of "material necessities" or wage goods. Smith had pictured this giant firm as working under increasing returns; as being capable of almost unlimited expansion either by free trade or capital accumulation.

What the Ricardian theory of Distribution in fact did was to curb this expansive optimism by showing that society as a giant firm would be working, on the contrary, under conditions of diminishing returns and that there would be a determinate limit to which population could expand, marked by the stationary state. Ricardo argued that the increase in population brought about by progressive capital accumulation would extend the margin of cultivation to poorer lands where a greater quantity of labour would be required to produce a standard unit of "corn". The price of "corn" would then rise and a higher rent would be claimed by the owners of the better grade land. Since real wages could not fall below the minimum subsistence level, money wages would rise which would in turn lower the rate of profit. Expansion would come to a stop when the marginal product of labour had fallen so low as to leave nothing for the capitalists after wages and rents had been paid off; for at this point, there would be no further incentive to accumulate capital and expand economic activity. Thus the emphasis was shifted from the absolute scale of social production to the social net product or the "Net Revenue" which increases at a diminishing rate as the scale of production is expanded. Thus Ricardo argued that it was not enough to infer the wealth of society from the Gross Revenue as Smith had done; we must further examine the balance sheet of the giant firm to find out how much net product in terms of "corn" has been left, after the wages of labour have been paid off. "Provided its net real income, its rents and profits be the same, it is of no importance whether the nation consists of ten or twelve millions of inhabitants" (Ricardo, *Principles of Political*

Economy, Everyman's edition, pp. 234-235). The aim of economic policy was thus to increase the net social output rather than the absolute scale of social production.

Malthus's contribution consisted in showing that it was not sufficient to regard society merely as a giant producing unit; and that it should also be studied as a giant consuming unit. He believed that there was no automatic synchronisation of society's capacity to produce and its capacity to consume; and that an attempt to expand economic activity by capital accumulation would result in a breakdown and a glut, long before the extreme limit of Ricardo's stationary equilibrium was reached.

We have not simplified the essential features of the classical analysis by suggesting the analogy of a giant firm producing a single commodity, "corn", with a single variable factor, labour. In the light of economic conditions existing at that time, there is much to be said for such a method of abstraction. In those days, wage goods in fact consisted of a few primary products which could be lumped together under the head of a single commodity, "corn", and the output of "corn" could then be used as a convenient index of the output of consumers' goods in general. At the subsistence level of real wages, "determined by the habits and customs of the people", a given output of "corn" could maintain a determinate quantity of labour. Labour, being a versatile factor, could then be turned to the production of all sorts of articles, both "necessities" and "luxuries", particularly so when the bulk of the luxury consumption was in the form of direct personal services. The concept of labour as the single variable factor is again a justifiable assumption. As we have pointed out, fixed capital played a relatively unimportant part in the economic life of that time and investment was mainly in the form of "advances to labour". Since land was assumed to be fixed in supply, social output could then be treated as the function of a single major variable, the quantity of labour.

It might at first sight be thought that an economic system supposed to produce a single "commodity" with a single variable factor could not give rise to any economic problems as we understand them nowadays; that once it is assumed that quantities of satisfaction are proportionate to the quantities of physical products, all problems of production would be of a purely technical nature. This however, is not true. For even when we have completely faded out the problem of allocating given resources among competing industries (and this extreme measure is not adopted by the classical economists), there still remains a major problem of choice: the choice between using labour directly for present consumption, or using it indirectly or "productively" so as to increase its own supply and thus increase future consumption. Here, the modern economist, working at the subjective level of analysis, would say resources should be allocated between present and future consumption, according to the time

preferences of the consumers. The classical economists, however, were working at the physical level of analysis. Since they believed that quantities of satisfaction are proportional to quantities of physical product, they arrived at the following interesting conclusion: optimum allocation between present and future would be attained when the physical product of direct labour is equal to that of indirect or "stored up" labour. That is to say, so long as the "round-about-method" of production yields a greater physical product than direct labour, additional investment would increase the economic welfare of society. Thus, the stationary equilibrium at which the rate of profits is reduced to zero may be regarded as the point of optimum investment according to Ricardo, although he was far from being cheered by its prospect.

Thus again we have a shift of the centre of attention from the problem of allocating *given* resources among different consumers' goods industries to the broader problem of distributing the resources between the consumers' goods and the producers' goods sectors of the economic system with a view to expanding the total volume of economic activity. Ricardo and Malthus might not be able to agree on the ideal "balance of production and consumption"; but they did agree that the key to economic prosperity depended on this balance. Malthus, with his Effective Demand approach, might not be able to accept the physical output approach of Ricardo, but he devoted the whole Book II of his *Principles of Political Economy* to the problem of Economic Progress and not to the problem of Economic Equilibrium. The fact that the "glut controversy" became the foremost issue of those times is a sufficient indication how far the centre of attention had shifted away from the equilibrium adjustments of relative consumers' demand in different industries to the savings-investment nexus.

III

The triumph of the Ricardians in the "glut" controversy was such that even that fragment of subjective element contained in Malthus's Effective Demand theory disappeared from classical economic thought. With J. S. Mill, technological considerations became predominant and the physical output approach was completely systematised.

This is apparent from the celebrated arrangement of the contents of his *Principles* which set the tradition of dividing the subject-matter of economics into Production, Distribution and Exchange. In Book I, under the heading of Production were considered those topics, later on to be repeated *ad nauseam* by the old-fashioned textbooks, e.g., advantages of division of labour, different laws of returns in agriculture and industry, relative merits of the large- and small-scale production, etc., all bearing on the technical efficiency of the producing unit in the best tradition of scientific factory organisation. The underlying idea of this Book is that the size of the national dividend is determined

entirely by technology and the laws of changes in the supply of factors, almost independently of the equilibrium process of the market.

When Distribution and Exchange were introduced in Books II and III, they merely played a secondary role of parcelling out this predetermined block of wealth, national dividend, among different individuals according to the prevailing system of economic organisation. It was not thought that Distribution and Exchange could directly affect the size of the national dividend.

Hence followed Mill's famous distinction between the laws of Production which are immutable physical laws and the laws of Distribution and Exchange which pertain to existing social institutions.

"The laws and conditions of Production of wealth partake of the character of physical truths. There is nothing optional or arbitrary in them. Whatever mankind produces must be produced in the modes and conditions imposed by the constitution of external things and by the inherent properties of their bodily and mental structure.—The opinions and wishes which may exist in these matters do not control the things themselves." (J.S. Mill, *Principles of Political Economy*, Ashley ed., pp. 199-200.)

Having absorbed Rae's theory of saving as the choice between the present and future consumption, Mill appears to be rather uneasy about the fact that the quantity of capital accumulation, a major determinant of the physical output, would depend on human choice. But he heroically stuck to his deterministic theory of production by arguing that the "excess of production above the physical necessities of the producers" not only offered the upper limit to savings, but also partly contributed to "determine how much would be saved". (*Ibid.*, p. 164, cf. p. 175).

With this deterministic theory of production there was a shift of emphasis from Adam Smith's concept of wealth as a flow of "annual produce", or the national dividend, to the concept of wealth as a stock, the national capital. Since the size of the physical output was supposed to follow as a determinate technical function from a given stock of resources and technique, the wealth of society could simply be measured by measuring the physical magnitude of its capital stock. Hence, more than any other classical economist, Mill made it a principle to exclude immaterial services from his "philosophically correct" definition of wealth as "instruments, meaning not only tools and machinery alone, but the whole accumulation possessed by individuals and communities" for the attainment of their ends. (*Ibid.*, pp. 8-9).

"It is essential to the idea of wealth to be susceptible to accumulation; things which cannot, after being produced, be kept for some time before being used are never regarded as wealth, since however much of them may be produced or enjoyed, the person benefited by them is no wise richer, is no wise improved in circumstances" (*Ibid.*, p. 47).

Thus the tendency of the nineteenth-century statisticians like Giffen to give pride of place to the calculation of the national capital rather than that of national income was in line with the economic theory of their time (Cf. Giffen, *The Growth of National Capital*).

Finally, it may be noted that once wealth was defined in a thorough-going materialistic fashion, Mill's much maligned concept of the "economic man" became the necessary logical prop to support the whole approach. It was merely a more explicit and courageous formulation of the idea which was implicit in the minds of most of the classical economists, viz., quantities of consumers' satisfaction might be assumed as being roughly proportional to quantities of physical product and that therefore a greater quantity of physical product or material wealth would be normally more preferable than a lesser quantity.

IV

Our interpretation of the classical outlook on the economic problem, if accepted, seems to cast a serious doubt on the practice of taking it for granted that the central problem of the classical economists was to demonstrate the "allocative efficiency" of the equilibrium adjustments to consumers' demand in the free market. We have seen that they were concerned, not so much with the problem of maximising consumers' satisfaction in the modern sense, as with the problem of increasing the total physical output. The central principle, which successfully unifies the various classical economic doctrines from Adam Smith to J. S. Mill, embodies the following fundamental proposition: viz., the economic welfare of society can be more effectively promoted (i) by increasing the physical productivity of labour and (ii) by increasing the total volume of economic activity,¹ rather than by tamely accepting the given quantity of productive resources and making refined adjustments in allocating them among different industries. From this follow the two major canons of classical economic policy: (i) free trade which extends the scope of division of labour and brings fresh resources into the productive framework and (ii) capital accumulation which enables society to maintain a greater quantity of labour.

What we have said above does not, of course, mean that none of the classical economists were ever concerned with the "allocative" problem. This would be going to the other extreme. A careful reading of the *Wealth of Nations* would reveal that Smith's analysis of this problem was on the whole confined to two odd chapters, chs. 7 and 9, Bk. I; but that within this narrow compass Smith succeeded in showing that the equilibrium process of the competitive market will lead to an optimum allocation of resources among different industries whether or not we share his metaphysical optimism concerning the

¹ This is quite compatible with Ricardo's emphasis on Net Revenue since expansion in total economic activity will increase the absolute size of the Net Revenue, although at a diminishing rate.

working of the "invisible hand". Again, Ricardo's theory of Comparative Cost (as distinct from Smith's theory of increasing returns from expansion of international trade) might be regarded as a classic piece of optimum reasoning, although Ricardo confined himself to the physical level of analysis and was concerned only with the technical optimum and not with the subjective optimum.¹ Finally, we might consider J. S. Mill's theory of reciprocal demand in international trade as opening up the whole avenue of demand approach.

All these points should be admitted. But even so, it is a far cry from this to the belief that the "allocative" problem was the *central* preoccupation of the classical economists. As we have tried to show, the truth of the matter was that taking classical literature as a whole, considerations concerning "allocative" efficiency were eclipsed by broader considerations concerning the means of raising the physical productivity of labour and expanding the total volume of economic activity. Once this is admitted, to exalt the "allocative" problem into the central problem of classical economics seems to be nothing short of reading our present-day preoccupation with the "allocative" problem into the classics through the distorting spectacles provided by the General Equilibrium economists of the Marginal Utility school. It is time we learnt to cure ourselves of this theoretical anthropomorphism and to approach the classical economists in the context of their own intellectual climate.

Were the classical economists, then, guilty of a confusion between the "technical" and the "economic" problem? If we accept their method of analysis at the physical level, the answer on the whole is no. It is true that the less gifted followers of the classical economists frequently got themselves lost in the niggling details of technological efficiency. But none of the major classical economists, with the possible exception of J. S. Mill, seems to be guilty of the "confusion between the technical and the economic problem," at least in the sense in which the present writer understands the phrase. That is to say, unlike the full-blooded technocrats they were not bemused by the purely technological or engineering possibilities of increasing output divorced from the economic calculus based on the relation between cost and output. If they get different results from us (e.g., they would advocate saving beyond the time-preferences of the savers so long as indirect labour yields a higher physical product than direct labour), it is because they were applying the economic calculus to physical quantities of labour and physical quantities of output. Perhaps Henry Sidgwick restated the classical position most clearly when he explained that:

¹ I.e., Ricardo was concerned with getting maximum physical output out of a given quantity of labour and not with getting maximum consumers' satisfaction out of a given quantity of product. Thus foreign trade "will very powerfully contribute to increase the mass of commodities and *therefore* the sum of enjoyments". *Principles*, Everyman's edition, p. 77 (*Italics mine*); also *ibid* p. 81. Quantities of satisfaction are still implicitly assumed to be proportional to quantities of physical products.

"The use of a more efficient machinery would not always result in the efficiency of labour as a whole : since the better instrument might require more labour to make and to keep in repair, and it is possible that this extra labour might be more productive if applied in some other way. Thus an invention *technically* successful may fail *economically*" (*Principles of Political Economy*, 3rd ed., pp. 124-5).

Of course it is quite true that a full distinction between the "technical" and the "economic" problem is not possible unless we can take into account the consumers' wants; unless we can choose among the many technically efficient ways of production a particular method which maximises the consumers' satisfaction according to the existing relative prices of the factors and the products. But may we not start with the physical level of analysis as a first approximation, always remembering that a second and more close approximation can be attained only by a further analysis at the subjective level?

After all, even when the economic welfare of society is regarded as consisting in the satisfaction of individuals' wants, it cannot be denied that this subjective economic welfare is as much quantitatively affected by the techno-institutional factors as by the equilibrium process of the market. Or perhaps even more. Therefore, it is not surprising that after decades of work on the "allocative" problem many modern economists should have turned their attention to such problems as output per man-hour, the extent of unused capacity, the socially desirable rate of investment, etc., problems having a distinctly classical flavour.

The Economics of Planting Density in Rubber Growing

By P. T. BAUER

1. The plantation rubber industry falls into two fairly distinct sections of about equal size, estates and smallholdings.¹ The planting density—the number of trees per surface unit—on smallholdings is much greater than on estates, some 200–300 trees per mature acre against 70–90 trees on estates. It is very generally assumed by European observers,² and almost universally by European planters, that the higher density on smallholdings reflects the failure of the smallholders to appreciate the adverse effect of this high density on the yielding capacity of the trees. This opinion, which has had important repercussions on smallholders' assessments under rubber restriction, appears to be mistaken. The different planting densities are only one aspect of the fundamentally different economic basis of rubber growing by estates and by smallholders.

2. In the choice of planting density the rational course is not the same for estates and for smallholdings. The latter incur no cash wage costs, being operated by the owner and his family, occasionally assisted by outside labour paid on a share basis. The smallholders attempt to maximise the gross yield per surface unit. On their densely planted holdings the trees are of smaller girth and the yield per tree lower than on the estates, but the yield per surface unit is higher. In Malaya and the Netherlands East Indies (N.E.I.) normal, unrestricted yields on smallholdings are about 475–500 lb. per mature acre, against some 400 lb. on seedling estates. The estate employing paid tappers tries to maximise the cash profit per acre, and it is held that the higher profit per tree resulting from the higher yield per tapper on less densely planted areas more than offsets the reduction in gross receipts due to the lower stand. Indeed, it has been claimed that very low stands, say 40 or 50 trees per acre, would give such high yields per tree that the profits per acre would be higher than on the more densely planted areas. There is, however, not enough evidence to support this view, which would be valid only on extreme assumptions. The smallholder would naturally also like to increase the output

¹ According to the latest information, smallholdings may account for almost three-fifths of the total planted area.

² The late Dr. H. N. Whitford was among those who appreciated that the difference in planting densities is due primarily to the absence of cash wage costs on smallholdings. This note is an elaboration of his argument in his *Report on Plantation Rubber in the Middle East—1930*. (Rubber Manufacturers' Association of America, New York, 1930.)

per tapper, and obtain a higher reward for his own labour for a given expenditure of effort. A widely planted holding would, however, necessitate the collection and transport of latex from an area so extensive as to be beyond his reach, with his limited equipment and labour.

3. In deciding the optimum stand, the estates should, strictly speaking, consider not only the relative yield per tree at various planting densities, but also take a view on the ratio of the price of rubber f.o.r. estate and of direct costs per lb. over a period of years, as different assumptions about this ratio would call for different stands per acre.

This can be simply illustrated. Suppose that over a number of years a more densely planted area yields 1,000 lb. per acre, as against 800 lb. on a less densely planted area. Unless prime profits per lb. (the difference between the price f.o.r. estate and direct costs on the estate) on the second area exceed those on the first by at least 25 per cent., the more densely planted area will be the better proposition. Assume that tapping costs are 3 cents per lb. (whether Straits cents or guilder cents) on the first and 2 cents per lb. on the second plantation. If the price exceeds other items in direct cost by 10 cents, the prime profit is 7 cents per lb. on the first and 8 cents on the second area; the ratio in favour of the second is insufficient to offset the larger yield on the first plantation, which is thus the better proposition. If, however, the price exceeds direct costs other than tapping costs by 5 cents only, the ratio of prime profits per lb. between the two areas will be two to three, and the less densely planted area becomes the more profitable.

4. In the 1930's the Rubber Research Institute of Malaya and the leading N.E.I. experimental station conducted experiments to examine yields and tapping costs on estates under different planting densities. The N.E.I. experiment covered a longer period and its results (published periodically in the *Archief voor de Rubber Cultuur*¹) are therefore of somewhat greater interest. The experiment covered bud-grafted trees only, whose crowns are generally larger than those of seedlings, and accordingly suffer more from overcrowding. An experiment with seedling trees would have shown results more favourable to the more densely planted areas.

TABLE I

RESULTS OF TAPPING EXPERIMENT IN THE N.E.I. ON THE RELATION BETWEEN PLANTING DENSITY, YIELDS AND TAPPING COSTS (Bud-grafted trees, seventh year of tapping)

	A	B	C	D	E
Initial planting density: trees per acre*	450	253	162	112	83
Relative yields per acre as per cent. of D					
(a) in seventh year of tapping ..	120	121	113	100	92
(b) over first seven years of tapping ..	125	123	117	100	93

¹ The journal, published in Medan, of the Experimental Station of the General Association of the Rubber Planters of the East Coast of Sumatra.

Output per tree per tapping

(a) grammes..	..	..	..	..	11.9	17.3	20.9	27.6	33.8
(b) as per cent. of D	..	..	..	..	44	63	79	100	126

Tapping costs

(a) cents per lb.	..	..	..	..	2.2	1.6	1.4	1.1	1.0
(b) as per cent. of D	..	..	..	..	200	145	127	100	90

* The original Dutch figures of kilogrammes and hectares have been converted into lb. and acres; hence the odd density figures.

The relative profitability of various planting densities would depend on the relative yields over the life of the trees, on the price of rubber, and on prime costs over the same period. But only on the most extreme and unrealistic assumptions of very low prices and high prime costs would an area as widely planted as E prove as profitable as C or D. Yet a density of 85 mature trees per acre was above the average on European estates.

Thus, in deciding on the optimum planting density, the choice should be influenced by assumptions about future costs and prices, in addition to such obvious considerations as yield per acre, quality of the soil, losses through disease and windfalls, and the possibilities and economics of future thinning out on a selective basis. The thinner stand, with its lower tapping costs, would come out better in a period of very low prices.¹ It is also possible that planting density may influence the distribution of yields through time, but on this subject there is no information. It would appear that these factors are not assessed very carefully in estate practice, partly no doubt because, with the extreme price fluctuations, assumptions about prices and costs for more than one year ahead are largely guesswork.

5. These considerations do not affect the fundamental soundness of the native practice of dense planting. In view of the virtual absence of cash costs and of the lack of capital equipment, maximisation of gross yield per surface unit is the overriding factor. It is often suggested that on smallholdings the trees are so crowded that total yields are adversely affected. There may have been individual instances of such excessive densities, but they were exceptional. Tables II and III summarise the results of two series of experiments on the relation between planting densities and yields on smallholdings.

¹ In the 1930's a system known as avenue—or hedge—planting was developed in the N.E.I., which attempted to combine the high yields per acre of dense planting with the higher yields per tree of lower stands. Trees were planted very closely along rows, which in turn were far apart; in each row trees were planted every 3 or 3½ feet, while the rows (avenues) were 40 feet apart. This method gave a high density per acre (about 300 trees), and it was expected that the roots would spread into the area between the rows, thus avoiding root competition and overcrowding, so that yields per tree would be high and tapping costs remain low; each tapper could also tap more trees than under more orthodox planting systems, since much less time was taken up by walking from tree to tree. Other, subsidiary, advantages were also claimed for this system. This planting method certainly appears attractive, but no yield data are available to support or disprove the claims put forward in its support.

TABLE II
RESULTS OF TAPPING TESTS CARRIED OUT DURING THE LAST QUARTER OF
1936 IN THE NATIVE DISTRICTS OF THE OUTER PROVINCES OF THE N.E.I.

Stand per acre	Average No. of trees per acre	No. of tappable trees per acre	Average production per acre per tap- ping day (lb.)	Calculated annual output per acre assuming 160 tap- ping days (lb.)	Average annual output per tappable tree (lb.)
(1)	(2)	(3)	(4)	(5)	(6)
Under 202 trees per acre ..	162	157	2.97	476	3.02
202-282 trees per acre ..	243	233	3.39	542	2.34
283-363 trees per acre ..	324	308	3.82	611	1.98
364-444 trees per acre ..	405	380	4.24	678	1.79
445-526 trees per acre ..	486	455	4.58	732	1.63
Over 526 trees per acre ..	567	521	4.75	759	1.46

From *Minutes of the Renewal Discussions of the International Rubber Regulation Committee*, p. 202. Hectares and kilogrammes have been converted into acres and lb.

The overall average density over the whole of the native area was estimated at 346 trees per acre, and the calculated average annual output was 545 lb. The trend of these figures seems in accordance with *a priori* expectations, but the level of yields seems somewhat on the high side.

TABLE III
RESULTS OF TAPPING TESTS CARRIED OUT IN SARAWAK BY THE MALAYAN
SURVEY DEPARTMENT IN 1936-37

Stand per acre	Number of plots	Average stand per acre	Average yield per acre (lb. per annum)
1-100	10	80	320
101-150	8	126	451
151-200	28	185	470
201-300	28	228	507
301-400	16	348	564
Over 400	10	494	630

From *A Report on Rubber Regulation in Sarawak* (1937) by W. F. N. Bridges. This report does not appear to have been published, though its contents were generally known in Malaya. A mimeographed copy is available among the papers of the International Rubber Regulation Committee. The experiment was apparently carefully controlled and its results seem reliable.

The planting densities ranged from 60 to 680 trees per acre, with an average of 239 trees. The annual yields varied from 169 lb. to 944 lb. per acre, with an average of 489 lb.

Though the N.E.I. tapping tests may not have been altogether reliable, the general trend towards a positive correlation between planting densities and yield per surface unit is beyond doubt. The results of the N.E.I. and Sarawak tests were also in accordance with the findings of an official Malayan enquiry held a few years earlier.¹

6. Nor is there anything to bear out the view that the high planting density on smallholdings is likely to affect adversely their productive life. The reverse seems actually to hold. The dense planting on smallholdings serves to maintain a low ground temperature which, combined with high humidity, brings about conditions favourable to bark renewal. It also acts as a useful brake on soil erosion, and also as a check on the spread of several noxious growths (especially

¹ The results of the enquiry, which was conducted in 1931-33, are summarised in *Bark Consumption and Bark Reserves on Small Rubber Holdings in Malaya*, Department of Agriculture, S.S. and F.M.S., Economic Series No. 4, Kuala Lumpur, 1934.

speargrasses) which not being shade-resisting cannot survive on the densely planted smallholdings, while often causing much damage on the widely planted estates. Lastly, it is now definitely established that wide planting and clean weeding contribute to the spread of the dangerous root diseases frequent on rubber estates in Malaysia. Here too, the dense planting on smallholdings has proved an advantage. All available evidence suggests that the high density lengthens rather than shortens the economic life of the smallholdings.

7. These considerations are rarely appreciated by the European planters who are called on to assess the smallholdings under rubber regulation. Their outlook emerges well from a series of articles by a former Malayan estate manager in the *Financial Times* in June 1937, and in *The Planter* in April 1938. The articles reviewed the results of a tree count in the native areas of the N.E.I. in 1934-36. The writer was regarded as an authority on planting topics, and was a frequent contributor to the financial press. Referring to the high density found on the holdings, the writer said, "... with a stand all over of nearly 300 trees per acre it is quite out of the question to expect yields of anything approaching standard production as understood by the European planter, who has found out by experience that 80 fully matured trees are all that the soil can carry economically. . . . How such closely planted stuff can ever hope to qualify for an award even approaching that of 'standard' is a problem which no planter would attempt to solve. He is well satisfied with about 80 mature trees to the acre . . . 200 lb. per acre would be a liberal estimate for such closely planted stuff" (my italics).¹ In actual fact smallholdings regularly yielded about 450-500 lb., as emerged from tapping tests in Malaya, the N.E.I. and in Sarawak, as well as from export and production figures during the years of unrestricted production.

The writer claimed to speak with special authority on this particular subject since he had not only spent years in the East but had, under the Stevenson Scheme, inspected and assessed scores of smallholdings in Malaya. Here is an example of the qualifications of the men who inspected or assessed Malayan smallholders under two restriction schemes—and may well do so again in the future.²

¹ The author also took it upon himself to comment on the violent monthly fluctuations in smallholders' exports; the output 'drops suddenly coincident with the refusal of the ill-treated trees to aid and abet their owners'. In actual fact the sharp fluctuations of these exports reflect the seasonal activities of rice planting and harvesting, the Mohammedan festival, and, above all, the exhaustion of the coupon issue under restriction. Such is the knowledge of the expert contributors to the leading financial and planting journals, and of the planters who assess the smallholders.

² The 1934-36 tree count in the N.E.I. was wholly vitiated by various factors, and a subsequent survey found that the actual acreage was close on double the area calculated from the tree count, whose results served as basis for the N.E.I. native quota under regulation from 1937 to 1941. One of the reasons for the failure of the tree count was the tendency of the planters, who were in charge, to neglect the very densely planted and overgrown holdings which they regarded as untappable, though they were quite tappable by the standards of the smallholders. A similar instance occurred in Malaya in 1935, when certain overgrown areas were omitted for much the same reason from the acreage statistics, as well as from assessment under regulation. They were gradually reinstated, but their exclusion vitiated the Malayan acreage statistics for some three or four years.

Book Reviews

Theory of Games and Economic Behaviour. By J. VON NEUMANN and O. MORGENSTERN. Princeton University Press. 1944. xviii + 625 pp. \$10.00.

Professors Neumann and Morgenstern have written a book designed to become a fundamental textbook of economic theory. The essence of the book is not a refinement or summary of mathematical economics but an outright condemnation of the particular mathematical methods used in economics, and the substitution for them of an entirely different mathematical approach to the central problems of economic theory.

According to the authors, the unsuccessful use of mathematics in economics (in comparison with other sciences) was due not to inherent causes but to the fact that an incorrect mathematical technique has been used. For the solution of economic problems it is necessary to remove two preliminary obstacles: the inadequate clarity in the formulation of economic problems, and the insufficiency of the empirical background. While the removal of these obstacles is necessary, this book is on a more abstract level, being concerned with the mathematical treatment of common human behaviour of economic importance. The main possibility of progress is seen in the quantitative treatment of factors which were hitherto labelled "psychological" and considered to be outside the scope of economics. The particular type of mathematical technique (that of infinitesimal calculus) which has been applied to economics, is well suited to the "Robinson Crusoe" type of problem; here the problem is clearly that of maximisation. But when we deal with an exchange economy, with two or more participants, the nature of the problem changes because now each individual is attempting to maximise something which is also dependent on the action of others.

An exchange economy contains various interests, sometimes parallel, sometimes conflicting, and economic equilibrium is the result of the interplay of those interests. The description of such a system requires the application of a mathematical technique different from that successful in physics and other natural sciences; in the abstract sense an exchange economy resembles games of strategy. Hence the first step in working out an economic theory is the creation of a complete theory of games. The latter requires a new mathematical technique, scarcely applied in other sciences yet, on which Professor Neumann was working for over fifteen years. It is now for the first time that the theory of games is published in its completeness, and this forms the bulk of the book.

The mathematical technique is that of combinatorics and set theory. On the face of it this technique looks more difficult than the usual method of infinitesimal calculus, but probably this is only due to its

unfamiliarity, not only to economists but to most scientists. On the other hand the mastering of the new technique does not require previous knowledge of higher mathematics; in fact the book explains all the mathematical concepts introduced from the beginning. There is therefore reason to hope that it may be taken up by economists; otherwise progress by this method of analysis remains unlikely.

The theory of games starts with two-person games, and slowly develops into tackling games with a great number of participants. In most games, of course, gains balance losses, while in economic society there is a positive difference corresponding to production. This difficulty is ingeniously overcome by introducing a "dummy" player, and by demonstrating that a game with a given number of participants where gains do not balance losses raises the same problems as a game with one more participant (the "dummy") where gains balance losses. As the theory of games proceeds from two-person to n -person games, the theory of economics advances from bilateral monopoly to the case of perfect competition, as a special case.

It is the main advantage of this approach that it gives to mathematics a more fundamental place in economics, from which it is possible to arrive at new truths, instead of merely translating literal economics into symbols. The fact that it starts with the case of monopolistic competition and arrives at the case of perfect competition only when the theory is made general, may seem to make it a more realistic approach. If we remember the misgivings of Professor Hicks when considering the "destructive consequences for economic theory" of the assumption of monopoly in perhaps the most finished product of the approach attacked in this book,¹ the contrast is even greater. But the main advantage of the new technique is its ability to deal with "coalitions" of participants, explain the reasons for the formation of "coalitions", and describe the result. It is demonstrated clearly that the *quality* of the problem changes as the number of participants increases and not only its complexity.

What is the outcome of the new approach? We should not expect new results in relatively simple cases, such as bilateral monopoly on the one hand or perfect competition on the other. But we can expect a most rigorous treatment of the different problems and an exhaustive enumeration of the possible alternative results. It will also be feasible to scrutinise the assumptions of perfect competition and examine whether the results of the old approach can be reaffirmed. Now and then interesting conclusions emerge; for instance, the exact definition of "discrimination" and the indeterminacy of the result with discrimination present.²

¹ *Value and Capital*, p. 83.

² Incidentally, utility, that fundamental concept of economics, is treated as a numerically measurable quantity. The reason is that any two events in the individual's complex of preferences can be equated in the preference map by assigning to them certain probabilities of occurrence. Though the place of this argument is not paramount in the book, it is no doubt of great interest to economists.

Professors Neumann and Morgenstern of course accept some of the axioms of economic theory, notably that of the profit motive. Their theory deals with economic statics only, and we must accept their assurance of its promises when applied to dynamic problems. The problem of economics, however, is considered from the point of view of the mathematician only, that is as a formal problem. Is it not the case that the backwardness of the science of economics is due not only to the lack of success of mathematical economics but also to the essential difference between the social and natural sciences? Namely, controlled experiments are not, or are very rarely, possible in social sciences, and therefore the formulation of hypotheses and their empirical testing, which proved so fruitful in other fields, cannot go hand in hand. Though the empirical background has the potentialities of great progress, the fact remains that there are no constants in economic dynamics and thus the perfection of the natural sciences must needs be unattainable. But it is too soon to pronounce judgment on a book of this nature. It is certainly an important book which will be read and studied for some time. It can be considered successful, however, only if economists are able to build on its foundations, and make use of it in the ultimate field of Applied Economics.¹

T. BARNA.

A History of Banking Theory. By LLOYD W. MINTS. University of Chicago Press. Cambridge University Press. 1945. 319 pp.

The first impression created by this book is one of incredible industry. The bibliography lists over six hundred works on banking and monetary theory, five hundred of which relate to the period before 1913. All of these are quoted at least once, and most of them several times, in the six-hundred-odd footnotes. The English specialist will be particularly interested to see that more than half the references are to American authors, who are too little known over here. There can be few other studies in this field in which so many minor writers are marshalled to contribute their mites to the wealth of opinion studied. In consequence, there are few which shew so discouragingly the recurrence of identical errors from generation to generation.

It is, indeed, the persistence of one such error which is Mr. Mints' chief quarry—even, perhaps, his King Charles' head. He finds everywhere the "needs of trade" heresy, which he calls the "real-bills doctrine" and defines as asserting that: if only "real" bills are discounted and commercial loans made, (i) bank money will expand

¹ It might occur to the reader, without trying to distract from the merits of the book, that having developed a complete theory of games, economics was perhaps not the most fruitful field for its application. It may be that the application to politics (both party politics and power politics) might be more interesting. Perhaps the two, three, etc., party systems correspond to bilateral, trilateral, etc., monopolies, reaching more complicated patterns in the international field. Or it may be that we have the germs of a theory capable of taking into account economic and political factors simultaneously.

and contract in proportion to every change in the volume of trade; so that (ii) the currency will have a desirable elasticity and the banks be at all times in a liquid condition (p. 9).

Of this theory he asserts: "There has been no improvement to this day on [Adam] Smith's statement and little advance in the criticism of it" (p. 11). Even when he comes to consider the last 30 years, he finds that it "has been as infrequently attacked . . . as formerly, although, again as before, many writers have clearly had no faith in it but have failed to state their opposition explicitly" (p. 260). Consequently, "For nearly two centuries in Great Britain and over a century in the United States we . . . have had frequent restatements of the real-bills doctrine, with occasional criticisms of it; while somewhat less frequently there has been advanced the alternative claim that the bank rate will control the volume of bank credit. Yet the difference of opinion is by no means resolved at the present time. This is a scandal, and, so long as it continues, economists are in no position to complain when their ideas in regard to banking legislation are ignored" (p. 10).

Mr. Mints would have us believe that this deplorable position exists because the majority of us are either secret adherents to the "real-bills doctrine", or are incapable of seeing its errors clearly. But is it necessary to go on fighting heresies which have been outgrown? And is current professional opinion really still concerned with these somewhat elementary views? Even the lucubrations of the Federal Reserve Board in 1923 are susceptible of a more charitable explanation, and it may be questioned whether any professional economist in this country has in the last thirty years regarded any form of the "banking principle" as worth much powder and shot. (Professor Robertson's critique in *Theories of Banking Policy* is the exception which proves the rule.) While belief in the virtues of Bank Rate survived longer, this has now clearly gone the same way. Perhaps if we had continued to treat these discarded notions more seriously, and demolished them more effectually, we might have done more to scotch the rampant growths of monetary crankiness; but life is short, and error hydra-headed.

Mr. Mints analyses the mass of material at his disposal under the three main headings suggested by his definition—checks upon over-issue; elasticity; liquidity. His method is a chronological one, and in each period he tests the soundness of the writers he quotes by their views on these topics—proliferating, of course, into the ephemeral controversies which have grown up around each from time to time. A large number of references are mere bald statements, thus: "W. Little asserted that competition in money-lending generally is desirable" (p. 111), or "H. S. Foxwell thought that bank paper is 'more or less' limited by the fact that it is issued against sound commercial credit; and N. A. Nicholson was of the same opinion" (p. 183)—to choose two pages at random. Both statements

are supported by references to the original sources; but both run the risk of over-dogmatism inseparable from any attempt to analyse six hundred books in three hundred pages.

Nor is it possible to feel altogether happy about Mr. Mints' original contributions to the debate. These occur chiefly at the end of Chapter XI, where he is dealing with liquidity, and where he suggests: (a) that the major portion of short-term debt should be eliminated; (b) that Government should borrow only on irredeemable stock; and (c) that fractional reserve banking should be suppressed. These are startling conclusions, and the English reader is bound to feel (perhaps complacently, but still justifiably) that to some extent Mr. Mints is impelled towards them by the practical defects of American banking and monetary policy rather than by the rigour of his theoretical analysis.

None the less the work remains a monument of hard and rewarding work. It would be difficult to find any significant opinion expressed during the last 200 years, either in Great Britain or in America, on the subjects in which Mr. Mints is interested, which he has not crystallised here. He exhibits, *inter alia*, the ancestry of many of the concepts masquerading as new ideas in recent controversy (e.g., "100% money", as found in 1823); and his book will remain a most useful guide to the original sources which he has so thoroughly combed.

J. K. HORSEFIELD.

The Impact of Federal Taxes. By ROSWELL MAGILL. Columbia University Press. 1943. xi + 218 pp. 20s.

As the author acknowledges in the preface, this book was written at a bad time, when on the one hand the public was little concerned with a tax system which bore but lightly on rising incomes, and on the other Congress was engaged on a major revision of the revenue law. The book exhibits some signs of haste, and, to judge from the acknowledgments to journal articles, a considerable amount of the matter has appeared in another guise.

Part, at least, of the author's haste is due to the fact that he was writing with a definite purpose—to endeavour to fix attention on certain major tax reforms at a moment when great revenue changes would in any case have to be faced. Professor Magill is a lawyer, and primarily interested in legal points; but he was formerly Under Secretary in the United States Treasury, and not a few of the defects which he discusses have economic implications.

After an introductory chapter, setting forth the author's view of an appropriate federal tax structure (on strictly orthodox conservative lines), Professor Magill discusses in some detail problems concerned with evasion, double taxation and broad economic effects, of personal income taxes, gift and inheritance taxes and profits taxes,

respectively. Among the more interesting points which arise are the extent to which property in the U.S.A. is tending to become settled, owing to the opportunities which carefully worded Trusts offer for the avoidance of the gift tax, and possibly also of inheritance taxes; and the danger to small businesses arising from the incentive to dispense with limited liability in order to escape corporation taxes. On the administrative side the importance of Treasury Rulings on tax law forms an interesting contrast to the complete reliance of British revenue officials on case law. Although Treasury rulings are finally subject to court decisions, the fact that authoritative advice and rulings are available in respect of business projects, may be a useful factor in reducing the uncertainty of business planning.

In a federation where the greater part of the revenue accrues to the constituent States and local authorities, a discussion of federal finance in isolation inevitably gives a feeling of incompleteness. For instance, in discussing the arguments for a federal sales tax (of which Professor Magill is a strong supporter), it would surely be advisable to relate the plan to the already existing State taxes of the same nature.

URSULA K. HICKS.

Falmouth, Massachusetts: Problems of a Resort Community. By MILLARD C. FAUGHT. Columbia University Press. New York. 1945. 190 pp. \$2.75.

The main problem of Falmouth is the relations, economic and social, between residents and non-residents. The full holiday season lasts for two months, and during this period the population rises from some 7,000 to between 30,000 and 40,000. Non-residents own nearly a quarter of the land but on the assessment for real estate taxes their share is 61 per cent. They cannot vote in local government elections. Judged by comparative objective standards both residents and non-residents do very well and get good value for their money, but jealousy and suspicion exist between them. The two groups have not become fused. Residents regard visitors as alien invaders, while visitors imagine they are being exploited.

Mr. Faught traces the history of the resort, showing how expansion took place, and studies its administrative problems in some detail. Here his analysis is interesting and suggestive. His main recommendation is for a Resort Council, on which non-resident interests could be represented and which should be responsible for "the overall planning and direction of the resort activities of the town". On the sociological side the book is rather weak and reveals little that could not be easily anticipated. Where he has used the questionnaire method his samples are very small and the results unilluminating.

T. H. MARSHALL.

World Economic Survey, 1942-44. LEAGUE OF NATIONS. Allen and Unwin. 1945. 292 pp. 10s.

This most recent—and presumably last—of the League's World Economic Surveys fully maintains the high standard set by previous issues, and covers a very wide field, including an account of the general economic situation in the chief countries; the production and stocks of foodstuffs, raw materials and industrial goods; consumption and rationing; financial, currency and banking developments and problems; price movements and control; international trade; and transport. It deals with the period from the autumn of 1942 until the eve of victory; for, wherever possible, the story is continued into the spring of 1945. The features of outstanding interest are that it provides a picture of world economic conditions just before the end of the war, i.e., of what must prove the starting point for the manifold tasks of post-war reconstruction; that it deals in detail with the food situation which has subsequently developed into the present food crisis; and that it includes a foretaste of the comparisons that will inevitably eventually be drawn between the courses, policies and effects, in the economic sphere, of the two world wars. Incidentally, it contains valuable references to the chief sources of information on the subjects discussed.

Unfortunately, but for obvious reasons, the records of wartime conditions and policies in many European countries, which were unearthed directly after the defeat of Germany, were not available at the time the Survey was written. The whole of this material has not yet been released to the public, but it is clear that this new information will necessitate some modification of the picture presented in the Survey. If the necessary additions and modifications could be incorporated into the Survey, a revised edition should become a historical document of great permanent value.

A comparison of the Survey's analysis of the food situation in the spring of '45, with the present food crisis, shows in a striking manner how great a deterioration has occurred since the end of the war, and how little the present crisis was anticipated, even by the well-informed. On the subject of wheat supplies, for instance, it is simply estimated that—at most—Europe would need about one-half of the estimated carry-over of the four main exporters in the coming year. There is no suggestion that drastic steps ought to be taken to increase supplies. In saying this no criticism is implied, as the present crisis can be largely attributed to harvest failures and other adverse events which have occurred since the Survey was written. On the other hand some criticism may legitimately be made of the small space allotted to the description and discussion of the various organisations, established or proposed by the United Nations, to promote international co-operation, after the war, in the provision of immediate relief and for rehabilitation and reconstruction. No doubt detailed discussion of the more technical aspects of some of these

problems was deliberately delegated to projected specialised memoranda—such as that on “Commercial Policy in the Post-War World”—but it would surely have been pertinent to examine more fully the appropriateness and probable efficacy of the machinery devised to deal with the problem of immediate post-war relief.

The “foretaste” of comparisons of economic experiences in the two world wars refers in particular to some of the financial material presented, ably and vividly, in Chapter IV. This chapter deals with the course of Government expenditures; taxation; borrowing and its absorption; the growth of gold reserves and foreign balances (including sterling assets); the expansion in the supply of money; its effects on interest rates and security prices; and, finally, currency measures in liberated countries. The series of diagrams showing the relation between the supply of money and movement of prices in 24 countries during the two world wars is particularly illuminating. The conclusion is reached that “whereas in the First World War the expansion of the note circulation was accompanied by price changes of comparable magnitude, the present increase in circulation has, in most countries, been appreciably greater than the rise in prices”. It is satisfactory to discover that in one sphere, at least, the lessons of experience have been learnt and practised. In conclusion it can only be said that this work deserves a wide public, and has added greatly to our already immense debt to the Economic, Financial and Transit Department of the League of Nations.

VERA ANSTEY.

Statistical Summary of the Social and Economic Trends in India (in the Inter-War Period). By S. SUBRAMANIAN. Calcutta. 1945. 41 pp. Rs.1-8 or 2s. 3d.

If post-war economic reconstruction is to provide an opportunity for improving the social and economic environment, and for promoting the welfare of the masses, it must be preceded, *inter alia*, by a general stock-taking, which shall provide a clear picture of social and economic conditions and trends before the outbreak of the recent war. This Mr. Subramanian has attempted to provide for India in statistical form in the volume under review, and a warm welcome should be given to this valuable, concise and, indeed, indispensable contribution to the subject.

The object of this statistical summary is to provide a factual survey of the inter-war trends over a very broad field—ranging from area and population, education and public health, through the various departments of production, to trade, transport finance, prices and wages and the consumption of certain staple articles. The main period covered by the various statistical series is that of the two inter-war decades, but in some cases where comparable figures are available the series continues up to 1943. The most striking and important changes

and trends are ably summarised in the Introduction, and even here a successful and praiseworthy effort is made to let the facts speak for themselves.

It is difficult to select highlights from this already extremely concise summary, which will repay perusal in full even by those who are least addicted to "statistics". The immense and increasingly rapid growth in population is rightly stressed as of the first importance; the tendency towards industrialisation and the problems thereby created are clearly revealed; the extent and nature of the changes in foreign trade and the balance of trade, and in the general trend of Public Finance (including the main changes resulting from the introduction of Provincial Autonomy), are set forth in striking contrast to the surprising stability (on balance) of agricultural and mineral production.

The actual statistical tables, which comprise the bulk of the material presented, are, on the whole, well selected and their story is strikingly illustrated in diagrammatic form, but they might have been made still more useful and informative by the addition (at least in some cases) of percentage calculations, All-India totals, and the inclusion of certain important and not very bulky additional information, such as the net contributions to public revenue from railways and other commercial services, and the war-time growth of sterling assets.

VERA ANSTEY.

French Canada in Transition. By E. C. HUGHES. University of Chicago Press. 1943. 222 pp. \$2.50.

Mr. Hughes has set out to discover what changes occur in social structure and organisation, and in the sentiments and relationships of the various groups and classes involved, when a small (French) township is invaded by new industries, accompanied by the disturbing and dynamic presence of the alien (English) managers and other agents and accessories of this new industrial capitalism. The scene of the drama is a township referred to as "Cantonville", in the Province of Quebec, which in 1911 was a country trading town of 2,605 inhabitants, but which by 1937 had become a flourishing industrial centre of 19,424 persons. Mr. Hughes' task has been, essentially, to analyse the "minority" problem involved which, important in itself, is still more important in so far as it is capable of suggesting comparisons and of throwing light on the problems of other countries and regions where growing industrialisation and urbanisation are complicated by ethnic differences.

The theme is interesting and of peculiar topical importance. Mr. Hughes has done his work thoroughly, and his analysis is detailed and penetrating, despite the fact (which he himself admits) that his manner and method are somewhat pedestrian. To those previously unconcerned with Canada's racial problem, the depth, prevalence and even bitterness of racial feeling and the allied social problems will

come somewhat as a shock, but the admiration provoked by Canada's (relatively) peaceful historical development will be enhanced by clearer recognition of the problems involved. Incidentally, it is interesting to note that even in Canada scapegoats have been sought in the form of "the Jews" and "the communists".

Analogies with other countries with "minority" problems are not specifically drawn, and it is difficult to say what lessons can be learnt from the history of Cantonville, or how Canadian experience can help the search for solutions of minority problems elsewhere. Indeed, the author does little more than state the problems. He makes little or no attempt to provide fundamental explanations and still less to suggest remedies. Hence the chief value of *French Canada in Transition* is its clear and detailed presentation of a quantitatively precise and limited amount of raw material appertaining to one of the most urgent social problems of our day.

VERA ANSTAY.

India: Supplement to Guide to Current Official Statistics, Vol. I, "Working Class Cost of Living Index Numbers". By S. SUBRAMANIAN. New Delhi. 1945. 20 pp. 12 annas or 1s.

India: Guide to Current Official Statistics, Vol. II. "Trade, Transport and Communications, and Finance." Prepared under instructions from the Economic Adviser by S. SUBRAMANIAN. Lucknow. 1945. 114 pp. Rs. 1-10 or 2s. 6d.

In Volume I of the *Guide to Current Official Statistics* a brief reference was made, in the section on Prices, to the official index number of working class cost of living in various Indian centres. It was pointed out that these index numbers are differently constructed—both as regards the choice of base periods and of the items included—in the various Provinces, and hence are not directly comparable. Numerous enquiries were received about the accuracy and inter-comparability of the index numbers, and hence Mr. Subramanian undertook to explain, discuss and compare them in a special supplement.

Cost of living index numbers are published monthly for a total of thirty-eight centres distributed amongst given Provinces, but full details of the methods employed are available only for the three enquiries conducted by the Bombay Labour Office and the one relating to Madras city. Mr. Subramanian concludes that "the enquiries relating to the other provinces do not lend themselves to any statistical analysis" and that since the enquiries were held at varying points of time there can be no guarantee that the weights for the different series possess a sufficient degree of inter-comparability, and consequently it is inadvisable to rely on them for an accurate inter-provincial comparison of the fluctuations of the cost of living, and still less for any inter-provincial comparison of the actual, or absolute, cost of living. It has long been recognised that Indian price data are extremely

defective, and little or no improvement seems to have yet occurred. The items included in the index numbers vary greatly from Province to Province, e.g., some include house-rent and miscellaneous items, others exclude these entirely. In general, therefore, it can be said that the most that can be learnt from these index numbers is a rough idea of the fluctuations in cost of living in each centre considered separately. It is, however, satisfactory to learn that in 1941 the Central Government prepared a scheme for the compilation of cost of living index numbers on a comparable basis in selected centres. This scheme was circulated to and discussed by the Provincial Governments, and an officer was appointed to make the necessary preparations, but it has been reported that "owing to the somewhat abnormal conditions prevailing in the country" progress has not been as rapid as was originally expected. Mr. Subramanian's analysis shows clearly how little reliance can be placed on the existing indexes, and it can only be hoped that a real effort will now be made to supply satisfactory information on this important subject.

Volume II of the "Guide" deals with trade, transport and communications, banking, currency and financial institutions, such as Joint Stock Companies, Insurance and Co-operative Societies.

The procedure adopted is similar to that followed for Volume I: i.e., full details are given of all principal Central Government publications, whilst occasional Central Government publications and all publications of the Provincial Governments are cited as references.

Volume II, like Volume I, is far more than a mere list of sources and references. Under each heading useful explanations are given of the nature and methods of compilation of the information supplied, and a critical review follows of the accuracy, adequacy and representativeness of the available statistics. This volume deals with many subjects, such as foreign trade, railways, shipping, and banking and currency, for which the statistical records are (relatively) accurate and complete. But in other cases the records are very defective; for instance, "land frontier trade" refers to selected commodities only; inland trade (for which no statistics were collected between 1922 and 1933) is measured, somewhat artificially, as between twenty-two "blocks", into which India is divided for this purpose; and in most cases the statistics are incomplete for the Indian States.

Attention may be called to certain new and interesting series: e.g., the Index of Profits (based on the year 1928) and those relating to broadcasting (full and illuminating).

No attempt has yet been made to remedy one serious gap—i.e., the lack of means of estimating the extent of foreign (i.e., non-Indian) capital investment in India. One of the chief difficulties is that Joint Stock Companies and the Exchange Banks which are incorporated outside India but have branches in India, make no attempt to estimate what part of their total capital is invested in India. But this gap can hardly be rectified by any action of the Government of India.

In conclusion it can be said that no one who has occasion to use Indian statistics can afford to ignore this most helpful guide.

VERA ANSTEY.

Business Leadership in the Large Corporation. By ROBERT AARON GORDON. The Brookings Institution. Washington, D.C. 1945. xiv + 369 pp. \$3.

In Messrs. Berle and Means the "Managerial Revolution" had its Taine, in Mr. Burnham its Michelet. In the absence of a contemporary Aulard or Mathiez three tasks confront the student of our Society: to collect and scrutinise new material, to investigate the causes of the phenomenon, and to elucidate those aspects of it which lend themselves to theoretical analysis. In attacking all three tasks in one book Professor Gordon has shown a boldness quite unusual in this age of specialists; in having accomplished them with so much success he has earned more than the gratitude of his fellow economists.

Separation of ownership and management is, in Professor Gordon's view, a necessary concomitant of increasing size of the business unit. "Large size inevitably professionalises business leadership for two reasons. First, ownership tends to become diffused with increase in size of the firm, requiring a transfer of leadership from stockholders to salaried managers. Secondly, even if ownership is concentrated in one or a few persons, such owners of a very large concern would find it a sheer impossibility to make all the entrepreneurial decisions necessary—hence the need for some delegation to professional managers." (321 *n.*) Some decision-making power thus shifts into the hands of professional managers. But what happens to "the entrepreneur"? "Separation of ownership and management" tells us nothing about the location of the entrepreneurial function within the managerial hierarchy. Professor Gordon's answer is that in the large corporation this function becomes partly diffused by delegation, but that part of it must be retained by the "chief executive". In his concept of "business leadership" he distinguishes three elements: initiation, approval and co-ordination of decisions. "Business leadership in the large firm includes initiation and approval of decisions affecting important economic variables which have a strong impact on the firm's activities . . . and co-ordination or the creation and maintenance of organisation. How much of what we have here called business leadership would be included in the usual definitions of 'management' or 'administration' or in many economists' definitions of the 'entrepreneurial function' must be left for the reader to decide." (53.) (Eagerness to avoid terminological controversy is a virtue which, like most virtues, can be practised to excess.)

In showing how "professionalisation of leadership" and the disintegration of the entrepreneurial function into its elements is an inevitable feature of industrial maturity, Professor Gordon, drawing copious illustrations from America's largest corporations, is at his very best. His book is a mine of information on the recent history of the large corporation in American industry. The process under discussion seems to have gone farthest in the railways, with public utilities running a close second. On occasion, however, when a company has to weather a storm and entrepreneurial action of a drastic kind is required, the old-fashioned business leader may re-appear on the bridge; the rôle of Samuel Zemurray in the reorganisation of the United Fruit Company, or of S. B. Colgate in Colgate-Palmolive-Peet between 1933 and 1938 are examples.

A chapter is devoted to "The Influence and Leadership Activities of Financial Groups" (pp. 189-221). Here the author's conclusions largely coincide with those reached by the present reviewer in a study of "Finance Capitalism".¹ As industries grow and accumulate reserves, they become less dependent on banks. In a progressive economy the influence of bankers is everywhere on the decline.

In the last chapter Professor Gordon considers the problem of public policy. The omnipotence of the managers, the lack of effective control over them, disconcerts him. Yet he has no doubt that "the function of business leadership belongs where it now is—with the executive group." (347.) The Board of Directors is no suitable instrument of control as long as it is—nominally—appointed by shareholders. The Managerial Revolution cannot be unmade. "The real revolution has already taken place; the great majority of stockholders have been deprived of control of their property through the diffusion of ownership and the growth in the power of management." (350.) He thinks "we could give a government agency, perhaps the Securities and Exchange Commission, the right to approve management selection of directors". In the light of these suggestions Professor Gordon, we may feel, might find a close study of German company legislation and practice under the Nazis well worth his attention.

L. M. LACHMANN.

Prospects of the Industrial Areas of Great Britain. M. P. FOGARTY.
With an introduction by G. D. H. COLE. Methuen and Co.,
Ltd. 1945. xxxv + 492 pp. 32s.

Edited summaries of the local reports of the Nuffield Social Reconstruction Survey, covering virtually the whole of industrial Britain, comprise most of this book, together with three chapters on more general trends and conclusions. The amount of factual material assembled is very considerable, and is the fruit of much labour by

¹ "Finance Capitalism?", *Economica*, May, 1944.

Mr. Fogarty and by the many local investigators of varied qualifications. While the presentation of the data leaves very much to be desired, especially on the score of consistency, the book may serve as a useful volume of reference, particularly for those interested in the details of the industrial structure of some individual regions. This is not a negligible achievement, and there is in fact a danger that it may be obscured by the many obvious defects of the book.

A constant use of vague general terms indicates the very low level of analysis. There is frequent repetition of "comprehensive planning", "balanced industry" and "positive action". Some semi-specific statements are not very satisfactory, e.g., the blessing of the Cotton Reorganisation Act of 1939—though this is followed by a fairly representative hedging phrase: "It would be inappropriate to discuss the merits of this and other proposals here; but it is justifiable to emphasise the importance of finding a satisfactory solution" (p. 471). Some passages in the introduction and in the text seem to suggest that under full employment a complete stabilisation of the existing geographical distribution of the population is envisaged, and that any movement except very short-distance migration should be discouraged or prevented. Although it may be agreed that there exists a presumption in favour of taking the work to the worker instead of the other way round, such a policy will often be costly in terms of real resources, and it is important in specific instances to have some idea of the magnitude of the cost. But no information on this matter can be found in the mass of detailed figures collected here. The author's desire for a "balanced distribution of industry" occasionally leads to a disregard of important external economies, revealing quite inadequate acquaintance with the industry or trade discussed. There may also be external diseconomies not borne by the industry or industries responsible. The absence of any data on these matters in the book is evidence of scanty attention to efficiency and economy. The value of the analysis can be seen from the fact that there are no references in the index to cost, efficiency, economy or external economies, a deficiency inadequately compensated by the sixteen lines of references to planning (excluding town-planning).

The general lack of precision is also reflected in the assumptions which frequently lead to tautologies. "There is little reason to suppose that under the conditions which have been assumed persistent unemployment would disappear—or, at any rate, would disappear without intolerable delay—in the course of undirected industrial development" (p. 457)—the assumption being (p. 451) that pre-war conditions will broadly prevail. There is also at times an excessive emphasis on the deficiencies of the pre-war economic system. Both a high and a low rate of employment of women are instanced as evidence of economic distress (pp. 10 and 456), which may be true but requires more careful thought than it has received in this book. The very low number of unemployables during the war is quoted to show what can be

accomplished under conditions of full employment, without considering adequately the special circumstances of the war, and without even mentioning such factors as the 100 per cent. E.P.T. or cost-plus contracts.

"The aim of the surveys has been to provide some solid grounds from which further plans can start . . ." (p. 451); it cannot be said that this aim has been anywhere near attained if by "further plans" specific action is meant. Neither the data, nor the analysis in these pages, suffice as a basis for policy if this is to pay any attention to reasonably efficient use of resources.

P. T. BAUER.

Theorie des Mittelstandes. By FRITZ MARBACH. Verlag A. Francke A.G., Berne. 1942. 425 pp. S. fr. 12.50.

This book throws rather interesting light on the genesis of middle class ideologies. The author relates (pp. 65-66) that at a congress of middle class organisations which met in Berne in 1924 a certain Mr. Leimgruber—who appears to be a person of consequence in Swiss middle class politics—voiced the urgent need for a system of thought which would do justice to the interests of the middle classes and their ideals. "The Manchesterism of Adam Smith and his *epigone*"—Mr. Leimgruber stated—"found access to the Universities only because it gave comprehensive expression to the idea of plutocratic economy". Socialists, on the other hand, are well provided with Karl Marx, etc., whereas for the middle classes there is just nothing. Therefore he demanded emphatically the creation of a new system, of "Mesonism" derived from *τὸ μέσον* = the middle.

Professor Marbach concurs in that "the middle classes have shown almost virtuosity in hiding their scientific light under a bushel" (p. 48), and with some (not very important) reservations as to the scope and methods of this new line of thought (p. 67 f.) he sets out to remedy this distressing state of affairs. He creates a series of definitions (p. 137 f.) which determine the essence of the Proletarian, the Middle Class Man and the Capitalist, but he skilfully avoids the danger of dryness by frequent touches of life. Thus we meet among other *ideal types* "the real revenue enjoying capitalist who shunts his wife through the fashionable hotels of all continents while he himself consumes primadonnas and Typmamsells" i.e., typists (p. 246). The Middle Class Man who, by definition (p. 137), is somewhat hard pressed in the modern world is eventually assured of his "existential constancy" (p. 257 f.). This "consoling message" (p. 90) is based by Professor Marbach not so much on the vast empirical material which field-workers, both economists and sociologists, have collected in studies of the shifting position of the middle classes and their modes of adaptation and survival. He rather deduces it from Marx's theory of surplus value—or better, from a clarified version of it which, he tries to show, is almost the same thing as the doctrine of property of

St. Thomas Aquinas (p. 150). Unfortunately the present reviewer has no means of ascertaining the degree of satisfaction which middle class minds may be able to derive from this philosophy written for their benefit.

H. BERNARDELLI.

Grundbrenn der Nationaloekonomie. Eine Einfuehrung in die Wirtschaftsbetrachtung. By EUGEN BOHLER. Verlag A. Francke A.G., Berne. 1944. 240 pp. S. fr. 10.50.

The short chapters I and II of this book give in the form of a *précis* some descriptive and classificatory notes on the subject matter of economics. The substance of the author's thought is deployed in chapter III which both in size and contents largely sustains the book. In well-written and closely knit paragraphs the author begins this chapter with an account of the Austrian version of the marginal utility doctrine, and finally leads up to a theory of prices which embodies much of the light that recent research on money and credit has thrown on the price mechanism. Throughout it has been the author's aim to show that there is a considerable body of common opinion among economists in these matters, and the balance which he strikes between different schools, and one-sided, more or less conflicting, developments of theories, impresses one as sane and competent.

It may be permissible, however, to point out that the author's acceptance of Wieser's interpretation of marginal utility analysis would seem somewhat to disturb the structural unity of his edifice. If one follows Wieser in believing that this doctrine consists in maxims of conduct of an ideally rational householder, one will inevitably be driven to scepticism as to the value of this theory for the explanation of actual price formation in the various markets (pp. 62-63). A different interpretation of marginal utility analysis, which takes it to be nothing more than the *heuristic* maxim that, in order to comprehend human acts of choice, one has to start with an investigation of the motives dominating the person, persons, or institutions in question, would obviously refer the whole complex as to what these motives in a given case actually are, how they are determined, and in what relative strength they occur, entirely to empirical observation. Thus the theory would *eo ipso* comprise the element of uncertainty, the hazards of judgment, and the traditional and largely irrational influences under which man actually values given objectives, and merely provide a formal uniform structure covering both the "isolated householder" and the most erratic and speculative participant in the modern market game.

Professor Böhrer has filled the artificial gap between the two cases by some lucid paragraphs dealing with the economic process in the macro-dynamic sense, and more specifically with its conditions of equilibrium (pp. 66-153), the fulfilment of which is decisive for the question whether

the intentions of the various householders and entrepreneurs are mutually compatible or not. It is true, of course, that from the point of view of social accounting the macro-dynamically relevant variables and conditions of stationary equilibrium are easy to grasp (p. 5), but nevertheless the practicability of Professor Böhler's arrangement would seem open to doubt. It is surely a bit awkward that the author in these paragraphs perpetually has to refer to the later portions on pricing, and the flaw is made obvious when he correctly insists, with great emphasis, that the mode of interaction of the macro-dynamic variables can be comprehended only through a detailed analysis of the pricing process.

Systematically, it would appear, the equilibrium conditions of the circular flow find their natural place in a discussion of the implications of the system of equations which is necessarily at the back of an author's mind when describing the reactions in time of the economic process, whether he gives an explicit formulation of it or not. Actually Professor Böhler goes very far in describing, at least in rough outline, a system of difference-, or differential equations that might serve the purpose of constituting a simple model (pp. 70-103, 185-186, 226-227). A fruitful discussion of the scheme would, of course, be made easier by proper mathematical treatment, which, however, the author avoids throughout, although one would surmise that students of a Swiss *Technische Hochschule* (for whom the book, presumably, is mainly intended) would find the methods required well within their curriculum. Thus one is left rather with the feeling that the author, by breaking off somewhat prematurely, has deprived himself of the gains of his labours, gains that could have been easily reaped by a convincing demonstration as to how his mechanism in time actually operates. Such a discussion of the solutions of the basic equations would automatically lead to the problems of dynamics: whether the process fulfils conditions of stability and approaches, therefore, a stationary or moving equilibrium, or whether it implies cumulative developments¹. At present the reader is somewhat unnecessarily

¹ Take, e.g., the simplest case of only two variables $x(t)$ and $y(t)$, where t stands for the periods 0, 1, 2, . . . , and let them be geared by the relations $x(t+1) = (1-a)x(t) + by(t)$, $y(t+1) = ax(t) + (1-b)y(t)$, the coefficients a and b being proper positive fractions. The circular process thus defined rests in equilibrium for $x : y = b : a$. But equilibrium can be disturbed if either (through an external shock, say) the foregoing relation is not fulfilled with regard to given coefficients a and b , or if one assumes that, with given initial values of x and y , coefficients a and b become operative (through the market mechanism, say) which demand a different equilibrium structure. As $(a+b) > 0$, in this simple case equilibrium is always restored (condition of stability); for $a+b > 1$ the approach of the stable position takes the shape of an oscillation. E.g., for $a = b = .9$ and $x(0) = 90$ and $y(0) = 10$ one obtains

t	0	1	2	3	4	$\rightarrow \infty$
x	90	18	75.6	29.52	65.384	$\rightarrow 50$
y	10	82	24.4	70.48	34.616	$\rightarrow 50$

The scheme Professor Böhler seems to have in mind as a simple model of the circular flow would, of course, be a somewhat more general case. But fundamentally the nature of the solutions of his equations should not differ radically from this example.

faced with a hiatus when he comes to the last brief chapter on economic dynamics.

Although the foregoing remarks are largely critical they are not meant, of course, to detract from the author's solid achievement. On the contrary, most of the difficult portions of the book are so lucidly written, sober and competent, that one will welcome from the author's pen further contributions to the subject.

H. BERNARDELLI.

SHORTER NOTICES

A History of British Tariffs, 1923-1942. By DERYCK ABEL. Heath Cranton, Ltd. 1945. 156 pp. 9s. 6d.

This is a good and readable account of the history of "the fiscal problem" in Great Britain during these twenty years. The author has been "at pains to outline the connection between purely economic data and the political, parliamentary and public atmosphere." He has succeeded in giving an interesting record of the facts combined with some account of the political forces and of the movement of public opinion both here and overseas.

Economic Development in S.E. Europe. Published by P.E.P. Distributed by Oxford University Press. 1945. 165 pp. 10s. 6d.

This survey includes Poland, Czechoslovakia, Austria, Hungary, Roumania, Yugoslavia, Bulgaria and Greece. "A group of experts from the various countries concerned," under the leadership of Professor Mitrany, have brought together a number of facts and estimates about these countries; the book contains many statistical tables but no map. Levels of nutrition are low; infant mortality is high; farms are too small; too much of the public revenues comes from taxes on goods of general consumption. There is need for much more capital in every field but "left to themselves, these countries could raise their rate of investment out of domestic resources only to a small degree and even then at the cost of an already all too low level of consumption".

Les Etats-Unis et la Grande-Bretagne devant le III^e Reich. By OLIVIER LONG. Georg & Cie, S. A. Librairie de l'Université. Geneva. 1943. 302 pp.

This is volume VI of the *Publications de la Faculté des Sciences Economiques et Sociales* of the University of Geneva; it has a preface by Professor Rappard.

The thesis of Dr. Long is that during the years 1934-39 the United States refused to adapt her general trade policy to the Schacht plan of exchange-control and in consequence suffered some fall in her volume of trade whereas Great Britain did compromise by making some payments (and clearing) agreements. His conclusion is that if

an important trading country adopts a planned economy, as Germany did, this is bound to create difficulties for other countries. He might have stressed more the fact that bilateralism contracts the total volume of trade besides forcing it into less advantageous channels, just as the substitution of barter for money would contract the total volume of exchange. In fact, the book is an account, based on wide reading, of the commercial policies of the United States and Great Britain during these six years. Special attention is paid to the rivalry between the United States and Germany in Latin America and between Great Britain and Germany in South-East Europe.

Population Facts and Policies. By EVA M. HUBBACK. George Allen and Unwin, Ltd. 1945. 48 pp. 2s. 6d.

This little pamphlet is designed as a first introduction to the subject of population studies for the intelligent layman. To attempt to write even the most cursory introduction within forty-eight pages is a very big task, and on the whole Mrs. Hubback cannot be said to have been successful. Important problems are passed over in a few lines and the pamphlet as a whole lacks balance. Moreover, the proof-reading has been careless and there are numerous misquotations of titles, as well as bad misprints, such as 0.01 for the net reproduction rate of England and Wales in 1938.

The British Balance-of-Payments Problem. By ARTHUR I. BLOOMFIELD. Princeton University. Autumn, 1945. 28 pp.

This essay, which is the sixth in the series on International Finance published by the Princeton Department of Economics, gives a clear and sympathetic outline of some of Britain's post-war difficulties. Although the essay was published some time before the Washington loan agreement was signed, the figures quoted and indeed the forecast of the agreement itself are closely in accordance with what has since been officially published. If the difficulties are to be overcome, Britain must show the utmost energy and adaptability, the United States must maintain her own economy at a high level of activity, must show the maximum of generosity in the financial settlement, and must not use her superior financial power to deprive Britain of export markets. The alternative is for Britain to relapse into bilateralism and other restrictive policies, to the ultimate detriment of the world in general and the United States in particular.

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Full Employment and International Trade¹

By FREDERIC BENHAM

TO-DAY it is widely believed that the supreme aim of economic policy should be to provide full employment. Anybody who dares to criticise this article of faith is deemed to utter, in the words of St. Paul, "vain and profane babblings". That is what I now propose to do.

Let me hasten to say at once that of course I think full employment very desirable, and that of course I agree that one of the principal aims of public policy should be to create conditions under which full employment is possible. But other things are very desirable too—for example, liberty and peace and better standards of living and less economic inequality and more social security. And a clash may easily arise between one of these aims and the aim of full employment.

For example, it is very simple to abolish unemployment by abolishing liberty at the same time. If free trade unions are suppressed and strikes forbidden, if workers are not allowed to choose jobs or refuse them but must do what they are told, then of course full employment could be achieved. But I think most of us would prefer our liberty.

In the same way, war nearly always means full employment. This is partly because of the conscription of labour and partly because of vast Government expenditure. In 1942 I heard one very eminent economist say of the United States: "I always knew they could eliminate unemployment if only the Government spent enough." Most of us would think some £15 million a day rather too high a price, and in any event we would prefer peace to full employment plus war.

The clash I shall speak of this evening is the clash which may arise between full employment and better standards of living, with special reference to international trade.

Standards of living depend mainly on output per head. Let us begin, therefore, by asking how significant unemployment is from this standpoint. Would full employment give us a world of plenty?

I must remind you that a certain amount of unemployment is inevitable. At any moment some workers are seeking new jobs, some are not at work owing to bad weather, and some will not be able to earn the minimum standard rates fixed for their occupation—unless special provision is made for this sub-normal minority, they will be able to get work only intermittently. It is generally recognised that a normal state of full employment would include a number out of work at any given moment. Thus, even in France, where the

¹ The substance of an Inaugural Lecture delivered at the London School of Economics on 22nd January, 1946, with Professor Robbins in the chair.

largest section of the population consists of peasant proprietors, in the nineteen-twenties, when the country was very short of labour, the numbers of unemployed recorded at the two censuses of 1921 and 1927 were a quarter of a million and half a million. In the United States, in the very prosperous years just before the great depression, when economists from all the corners of the earth were visiting the States to discover the secret of full employment at high wages, the number of unemployed was around two million. In Russia, in July, 1930, when the number of unemployed had fallen to half its former level and the Commissariat of Labour abolished unemployment insurance, declaring that unemployment was then negligible, the percentage of unemployment was about 5. For this country, Sir William Beveridge puts the number of unemployed in a state of full employment at about half a million, and his estimate has been criticised as too low.

If, then, we ask what is the loss of output due to unemployment we must count only preventible unemployment; we must deduct the inevitable minimum. The answer for this country, during the period between the wars, is as follows, in round figures. In the 'twenties unemployment averaged about a million, in the depression years 1930 to 1934 about two and a half million, and subsequently about a million and a half. If we deduct half a million each year as unavoidable, we are left with an average over the whole period of about 1,000,000 a year. The total working population was about 20 million. There was some unrecorded unemployment, but against this may be set the fact that there was less unemployment of capital than of labour and that on the average those in employment were rather more efficient than the unemployed. The loss of output was therefore of the order of only 5 per cent. And that was in this country, which suffered from unemployment more than almost any other during this period.

The outstanding exception was the United States in the 'thirties, where unemployment never fell below 8 million and at times rose to 12 million or higher. But it would surely be wrong to base our generalisations on the experience of one country during one decade—especially when some aspects of its economic policy were, to say the least, a little peculiar. The Americans expect to maintain full employment in the future; let us hope they will.

For most countries the loss of output due to preventible unemployment, taking good years and bad together, is less than 5 per cent. Five per cent. is a miserable, beggarly, insignificant proportion. Five per cent. is never going to transform poverty into plenty. Those who regard full employment as the economic hope of the world are very definitely backing the wrong horse.

Contrast the striking effects of technical progress, accompanied—as a rule—by some growth of capital and specialisation. Every year witnesses many thousands of inventions and discoveries and

improvements in every field; their cumulative effect is to increase very greatly our control over Nature and our productivity. For example, in the United States manufacturing production per man-hour increased perhaps sixfold¹ between 1870 and 1938; between then and the close of 1944 it increased a further 20 per cent. In this country industrial output per man-hour increased by 28 per cent. between 1907 and 1924 and by 32 per cent. between 1924 and 1936. In most "western" countries the average output per man-hour, taking all branches of production together, is at least double what it was in 1870; in some it is treble, or more than treble. Two hundred or one hundred or even fifty per cent. is really significant. It makes five per cent.—a maximum of five per cent.—look very small indeed.

I expect that you will want to make two comments on these points in order to dispose of them as irrelevant and immaterial. The first comment is that the fear of unemployment is a constant shadow menacing all who may lose their jobs and their livelihood. True. But this shadow menaces also those who work on their own account: for example, small shopkeepers and farmers. The remedy is a guaranteed national minimum income for all, coupled with schemes for training and rehabilitation of the unemployed. The second comment is that technical progress and full employment are not incompatible; we want both. I agree that technical progress is unlikely to cause unemployment, given a certain amount of mobility between occupations and industries and places. The last hundred years or more have seen a continuous growth of technical knowledge, not infrequently embodied in labour-saving devices, and yet on the whole employment has expanded together with population. But I am not at all sure that everybody will agree with us. It is not many years since the use of fertilizers was forbidden in the cotton-growing industry of the United States and the use of agricultural machinery in the wheat industry of Hungary; it took this country several years to get even one continuous strip mill, and the sugar industry of the West Indies is by no means fully mechanised. However, let us hope that no clash will arise between the march of technical progress and the desire for full employment. I turn instead to the subject to which this lecture has special reference—to international trade.

International trade has just the same effect as technical progress in raising standards of living. Technical progress enables the Canadian worker to produce twice as much wheat as before. International trade enables the British worker to get twice as much wheat as he could produce for himself by working in the export industries and importing wheat in exchange. Yet, whatever we may think about the probability of clashes in economic policy between the aim of technical progress

¹ League of Nations: *Industrialisation and Foreign Trade*, p. 48. Colin Clark (*The Conditions of Economic Progress*, p. 10) puts it at three-and-a-half-fold. He adds: "In Great Britain real output per worker-hour was about doubled in the sixty years preceding 1907, and increased by over 50 per cent. between 1907 and 1936."

and the aim of full employment, there is no doubt whatever that clashes have arisen in the past, and may well arise in the future, between the aim of taking full advantage of the opportunities of international trade and the aim of full employment. Nearly every country in the world has at times imposed restrictions on imports, and one of the main motives has been to provide or maintain employment at home.

Modern economic theory supports the view that expenditure on exports provides employment at home. It is akin to expenditure on investment. The workers and others engaged in the export industries spend their incomes, thus creating further employment. On the other hand, expenditure on imports is like saving. In so far as money is spent on imports instead of on home-produced goods it tends to cause spreading ripples of unemployment.

This, of course, is not the whole story. Some imports obviously make possible employment—for example, imports of raw materials—and other imports, for example, of Paris models, may increase the propensity to consume in various ways. Conversely, some exports—for example, of textile machinery to countries setting up their own industries—may lead to unemployment later in the textile industries of the exporting country.

But even if it were true that exports always create employment at home and imports always create unemployment at home, it is a complete *non sequitur* to conclude that our aim should be to export as much as possible and to import as little as possible. This conclusion implies the premise that our supreme aim should be full employment at all costs. I have already argued that other aims are more important than this. It is surely fantastic to try to make work rather than to save effort. Why turn back the clock of civilisation by refusing the benefits of either technical progress or international trade in order that men may sweat and labour more? If we want to abolish poverty and to make possible fuller and more gracious lives we should aim at larger incomes and more leisure, not at creating needless toil.

The view that imports should be restricted, in certain circumstances, in order to relieve unemployment is a nationalistic view. Even if it succeeds, it may create more unemployment abroad, in the countries which suddenly are deprived of their markets, than it relieves at home. This is not likely to promote international peace and goodwill.

Moreover, it is a short-sighted view. Other countries are almost certain to follow suit, to the detriment of one's own export industries. The chances are that the country which began restricting will end up with more unemployment than before.

This is well illustrated by the economic history of Great Britain in the nineteen-thirties. The depreciation of the pound temporarily removed a competitive disadvantage from British exports, but it was followed by a whole series of devaluations and depreciations of other currencies. The protective tariff of 1932 probably fostered investment

in our protected industries, but it was followed by a whole series of restrictions on imports imposed by other countries. The net result of all this was that the volume of British exports in the thirties was 25 to 30 per cent. below the 1929 level. Unemployment, after recovery had set in, averaged a million and a half, against a million in the twenties, and was mainly in the exporting industries and districts.

Great Britain did recover from the great depression. But her recovery was not due to her tariffs and quotas, any more than it was due to her policy of increasing taxes and reducing public expenditure, especially on public works. Her export industries suffered and there was little expansion of employment in the protected industries as a whole.

How, then, did her recovery come about? The total consuming power of the mass of the British people probably *increased* a little during the years 1930 to 1932. It increased considerably, perhaps by 10 per cent., in 1933, and thereafter continued to rise. This increase in consuming power was the chief single factor in promoting recovery. It provided a margin, above current living expenses, out of which purchases were made of goods such as motorcars, wireless sets, furniture, household appliances, and above all, houses.

Why did consuming power increase? Mainly because of the great fall in import prices. During the years 1931 to 1935 the volume of retained imports was about the same as in the pre-slump years, but their money cost averaged only some £700 million a year as compared with about £1,000 million before. In particular, most foodstuffs fell heavily in price. It was mainly as a result of this that the cost of living in 1933 was 15 per cent. below its 1929 level.

This meant that the great majority of wage and salary earners, who kept their jobs with small reductions, if any, in their pay were better off than they had ever been before. They now had a margin to spend on housing and semi-luxury goods. The housing boom in particular played a leading part in generating employment.

So much for the view that countries which export cheaply are "exporting unemployment". If the goods are materials, they reduce costs in the importing country. The steel-using industries of Great Britain, which employ far more workers than the steel industry itself, are worse off now than they were in the days when Great Britain imported cheap "semis" from the continent. If the goods are consumption goods, their low price may well afford a margin out of which purchases of durable consumption goods may take place, as they did in Great Britain. Our recovery was assisted by cheap money; but it was due mainly to cheap imports.

I shall now consider briefly some other variations of the full-employment theme in connection with international trade. I begin with the view that if a country has considerable unemployment and an adverse balance of payments it should devalue its currency. We have seen that this did not work with Great Britain, but Great Britain

is an important trading country and moreover she cannot go off sterling—the sterling bloc clings to her as closely as the Old Man of the Sea to Sinbad. It might perhaps work with a small country, which could devalue without anybody else taking much notice of it. It might work, for example, with Jamaica.

I choose Jamaica mainly because I happen to know it. The argument for devaluation in Jamaica, which has been put forward on the assumption that Jamaica has heavy unemployment (which it hasn't) and an adverse balance of payments (which it hasn't), is based on the hypothesis that this will enable real wages to be reduced and so provide more employment.

One of the most persistent economic myths of our time is the myth that workers will fight to the death against any reduction in money wages whilst accepting without a murmur a steep rise in the cost of living. One would have thought that the article by Mr. Dunlop¹ would have destroyed this myth, at any rate for Great Britain. His conclusion, based on a detailed study of negotiations, is that trade unions have been as willing to strike for advances in wage-rates when the cost of living has risen by more than about 5 per cent. as to strike for the maintenance of a wage-rate when threatened with a reduction. One would have thought that the general 25 per cent. reduction in money wages accepted overnight by the strongly organised wage-earners of Australia during the slump would at least have shaken the believers in this myth. Not a bit of it. The myth is as strong as ever.

Well, one need not be a prophet to know what would happen in Jamaica. One immediate result of devaluation would be to raise the prices, in Jamaican pounds, of her exports. Her chief export is sugar. Immediately the trade union leader of the sugar workers, a gentleman named Mr. Bustamante, would be on the war-path. He would secure a large enough increase in wages, as he has done in the past, to leave the sugar industry with little more than normal profits. Next, other agricultural workers would strike for increased wages in order to keep in line with the sugar workers. The prices of local foodstuffs, as well as of imported foodstuffs and other imports, would go up. The cost of living would rise. Workers in the towns would strike for increased wages to match the rise in the cost of living. Before we knew where we were, wages in Jamaica would have risen by about as much as the Jamaican pound had been devalued. This bright scheme to increase employment by reducing real wages would be practically still-born. But it would leave behind it a permanent burden on all with fixed incomes and it would tend to scare away outside capital—which Jamaica badly needs—from fear that the dose might be repeated.

May I say in passing that to my mind the best feature of the Bretton

¹ J. T. Dunlop: "The Movement of Real and Money Wages": *Economic Journal*, Vol. XLVIII, September, 1938, p. 426.

Woods proposals is that they do provide for frequent consultation. If a country is determined to devalue its currency it can always find a plausible reason and nobody will stop it in practice, but at least it will be done after discussion and with the nominal consent of other countries ; it is thus less likely to start a general beggar-my-neighbour orgy of competitive devaluations.

I turn to Imperial Preference. Some people still think that this provides sheltered markets and therefore stable employment. It certainly has not done so for British exports. The value of British exports bought by the Empire was well over £300 million a year in the 'twenties ; it was only £200 million odd a year in the later 'thirties. The reason, of course, is mainly increasing Protectionism in the Empire. It is cold comfort to the British manufacturer who is fined, say, 20 or 25 per cent. in order to enter an Empire market, to be told that he gets preferential treatment because foreign goods are fined, say, 30 per cent. He would much prefer to have the market free, and to take his chance against both foreign and local competitors on equal terms for all.

The proportion of British imports coming from the Empire increased considerably under Preference. But on much of this trade the Empire obtained no real benefit from British preference. For the Empire sells more of most commodities than Great Britain can take. Hence Empire producers had to find markets elsewhere for the balance, and competition among themselves reduced the value of British preferences to zero. For example, if Canadian wheat-exporters were getting a higher net return by selling to Great Britain, Canadian sales of wheat would be diverted from other countries to Great Britain until this advantage disappeared. The only way in which Empire producers of such a commodity could have benefited by the British preference (of 2s. a quarter) would have been to form a monopolistic organisation in order to charge British consumers more than foreign consumers for their wheat. This they did not do—for various reasons. Hence, the only real benefit went to a few commodities, such as sugar, of which Great Britain imported more than the Empire exported. On those few commodities it was vital, but other commodities either received no preference or reaped no benefit from it.

Hence statistics showing how much Great Britain takes of Empire produce, or how much the Empire takes of British produce, prove nothing at all. This point is well illustrated by the trade dispute of 1936 between Japan and Australia. Japan was a large buyer of wool from Australia, and decided to retaliate on Australia by suddenly ceasing to buy any of her wool—not a pound of it. And what was the result ? Australian wool-growers did not suffer at all. As Sir Earle Page pointed out, when Japanese purchases were diverted to South Africa, raising prices there, other buyers who usually bought in South Africa switched over to Australia for their supplies. "No matter," said this enlightened Australian Minister, "no matter where one

particular section of the demand goes, the remainder of the demand must be satisfied—if not from the usual source, then from another”. So long as Japan bought the same amount of wool from somewhere Australia was not injured. She could readily sell her wool elsewhere. In the same way, Australia would not suffer if for some inconceivable reason Great Britain bought none of her wheat, provided that she continued to buy as much wheat as before. The fact that Great Britain does buy Australian wheat, or wool, does not mean that Great Britain confers a favour on Australia, any more than Australia confers a favour on us by selling to us. Both parties gain by trade, and the total gain is greatest if all are allowed to buy and sell in whatever markets they find most profitable. Another illustration of the same point is provided by the British trade agreements made in 1933 and 1934 with Scandinavian and Baltic countries. These agreements all provided that these countries should take a large proportion, larger than before, of their coal from Great Britain. And what happened? British coal exports to these countries rose from 5 million tons in 1932 to 8½ million in 1936 but *total* exports of British coal *fell* by 4½ million tons over this period, whilst German and Polish exports of coal increased considerably. By providing herself with a sheltered market in the North, Great Britain intensified the competition of other coal-exporting countries in other markets.

Imperial Preference has been on the whole a restrictive influence on world trade. Great Britain has been handicapped in making concessions to other countries by the pledges she gave to the Dominions. The Empire has tended to create preferential margins by raising its duties on foreign goods. The system has not strengthened the bonds of Empire. The British farmer resents the free entry of meat and dairy produce from the Dominions; the Dominions, who pressed for the system, have found the benefits of it far less than they had hoped and are realising that if they want to increase their sales they must look to other countries and free themselves to some extent from their undertakings to Great Britain. India hates the system. The colonies, even the West Indies, feel that by some trickery Great Britain is reaping most of the gain from it. To my mind, the time is ripe to abandon it.

But something should be put in its place. I think a very good suggestion is that leading governments, notably those of Great Britain and the United States, should guarantee fixed minimum prices for certain commodities, and be prepared to hold stocks of them. This would be of far more benefit to Empire producers than Imperial Preference, although other producers would enjoy the same benefit. Provided that the minimum prices were not fixed too high, were revised from time to time, and were associated with maximum prices at which the governments would sell from their accumulated stocks, this measure would help everybody. It would help producers by putting a floor, instead of an apparently bottomless pit, below their

feet. It would help buyers by acting as a brake on abnormal price rises. It might well give the governments concerned a trading profit, for they would be selling at higher prices than they paid. And it would tend to smooth out cyclical fluctuations.

In return, I think the Empire and other countries might be expected to follow a somewhat more liberal trade policy. If it is fuller employment which they want, the history of the last decade should have taught them that trade restrictions do not achieve it. If it is higher standards of living, the same conclusion follows. How does it raise standards of living in, say, a tropical colony, to impose heavy duties on cheap canvas shoes in order that a few score of workers may make much more expensive shoes in a local factory? Most of the poorer people cannot afford to buy the locally-made shoes. They go barefoot and probably catch hookworm. Then Great Britain is blamed for not looking better after their health.

This leads me to my last topic, industrialisation. It is sometimes argued that so-called backward countries should industrialise themselves in order to provide employment and to raise their standards of living. If this merely means that they would be better off if they had more capital—better means of transport, more irrigation, better housing, and so forth—this is undoubtedly true. Nobody prevents them from getting it, by their own efforts, if they care to follow the Russian example. Nobody prevents them from borrowing it, if they can convince the lenders that they can and will repay. But I shall speak of industrialisation in the sense of increasing their own manufacturing.

I suspect that some of those who advocate this are victims of a simple logical fallacy. They think that because most rich countries are industrialised, their country will become rich if it industrialises. One might as well argue that because most wealthy men smoke cigars one has only to smoke cigars to become wealthy.

It is true that the value of output per worker is usually higher in manufacturing than in agriculture. This is partly because manufacturing usually employs more capital per worker than agriculture. In some countries, it is partly because local manufacturing is highly protected. Before the war there were several countries—I had better not name them—where very eminent members of the ruling class were the chief shareholders in local manufacturing concerns. Competition in these products, whether from imports or from new local firms, was virtually prohibited by law. The prices charged were very high. Hence, a small fraction of the population produced, say, a quarter of the whole national money income. "Look at those figures!" the armchair theorist would exclaim. "See how much more productive is manufacturing!" "Look at that racket!" the realist would reply. "See how the mass of the population is exploited!"

In most backward countries which have industrialised to some extent, behind a barrier of Protection, real wages per hour in the factories are little higher than in agriculture and the factories have difficulty in attracting labour from the villages. Consumers have to pay more for most of the local products than they would have to pay for imported products, free of duty, but the factory wage-earners get no marked benefit.

The argument for industrialisation which is relevant to this lecture is that it is necessary to provide employment. I would be the last to deny that in some backward countries more factories are desirable; indeed, in the West Indies I was on committees which proposed various ways of encouraging them—provided that eventually they could stand on their own feet. But I would urge that the facts and circumstances of each country must be carefully studied before making sweeping generalisations. Often other things—improvements in productivity per worker in agriculture, more diffusion of technical knowledge and training, better communications—are more vitally and urgently needed than factories. And the “employment” argument for factories is weak in the extreme. More labour-intensive forms of agriculture (such as the stall-feeding of livestock), handicrafts, and services of all kinds, give far more employment than factories per unit of capital in these capital-scarce countries. For example, in India, which has undergone considerable industrialisation and has enjoyed tariff autonomy for twenty-five years, the total number of factory workers is still less than three million—as compared with an annual increase in population of some five million. In other backward countries the proportions are much the same. Factories make a very minor contribution to the employment problem.¹

We all hope that standards of living in backward countries may be raised, and outside help in the form of loans and technical guidance will speed this aim. But these countries will not make much progress if they deliberately reduce the real return to their efforts by throwing overboard the great advantages of international specialisation.

As for Great Britain, we too need to concentrate on efficiency and to use our labour and resources in the best way. Our problem is not to create work but to maintain and improve the standard of living of 46 million people on a fairly small island. It is surely clear that we cannot do this unless we take full advantage of both technical progress and her twin sister, international trade.

¹ It is sometimes urged that factories provide a good deal of indirect or subsidiary employment—for example, in distributing their products. But, as a rule, much the same labour would be needed to distribute an equivalent quantity of imports. Again, it is sometimes argued that a local cement plant, for example, would provide employment indirectly in housing, road-making, and other branches of economic activity which use cement. True, and the cheaper the cement the more of it would be used. If the local plant can make cement cheaper than imported cement it will tend to increase employment. But if it makes it dearer it will tend to diminish employment.

The Marginal Cost Controversy

By R. H. COASE

I. THE STATE OF THE DEBATE

I WISH to discuss in this article the question of how prices ought to be determined in conditions of decreasing average costs. In particular, I wish to discuss one answer to this question which is by now familiar to most economists and which may be summarised as follows:

- (a) The amount paid for each unit of the product (the price) should be made equal to marginal cost.
- (b) Since, when average costs are decreasing, marginal costs are less than average costs, the total amount paid for the product will fall short of total costs.
- (c) The amount by which total costs exceed total receipts (the loss, as it is sometimes termed) should be a charge on the Government and should be borne out of taxation.

This view has been supported by Professor H. Hotelling,¹ Professor A. P. Lerner,² Mr. J. E. Meade and Mr. J. M. Fleming.³ It has aroused considerable interest and has already found its way into some textbooks on public utility economics.⁴ But despite the importance of its practical implications, its paradoxical character, and the fact that there are many economists who consider it fallacious, it has so far

¹ "The General Welfare in relation to Problems of Taxation and of Railway and Utility Rates", *Econometrica*, July, 1938.

² In his book, *The Economics of Control* (1944). Professor Lerner had earlier set out this view in articles in the *Review of Economic Studies* and in the *Economic Journal*.

³ "Price and Output Policy of State Enterprise," *Economic Journal*, December, 1944. See also J. E. Meade, *Economic Analysis and Policy*, 1936, pp. 182-186, American edition (1938), pp. 195-199.

⁴ See C. Woody Thompson and Wendell R. Smith, *Public Utility Economics*, pp. 271-273, and Irston R. Barne, *The Economics of Public Utility Regulation*, pp. 586-588. See also Professor Emery Troxel, "I Incremental Cost Determination of Utility Prices," "II Limitations of the Incremental Cost Patterns of Pricing," "III Incremental Cost Control under Public Ownership," *Journal of Land and Public Utility Economics*, November, 1942, February, 1943, and August, 1943; and Professor James C. Bonbright, "Major Controversies as to the Criteria of Reasonable Public Utility Rates," *Papers and Proceedings*, American Economic Association, December, 1940. Professor Bonbright points out that the "extreme social conservatism of most public utility and railroad specialists had prevented" this solution "from gaining wide acceptance, or even from receiving any considerable notice, in the literature of rate theory". However, he thought that it might become a live issue in the next few years (after 1940) as a result of Professor Hotelling's article which Professor Bonbright considered to be "one of the most distinguished contributions to rate-making theory in the entire literature of economics".

received little written criticism.¹ It may have been the sheer quantity of literature in favour of this solution, and the relatively small amount of written adverse criticism which led Mr. J. M. Fleming to claim that it "is not, I think, open to serious criticism" and to lament the fact that it was not more widely understood and accepted "outside the narrow ranks of the economists". But a different solution, which I believe in essentials to be the correct one, had already been suggested by Mr. C. L. Paine in 1937² and by Professor E. W. Clemens in 1941.³ I wrote in 1945 a short note criticising the solution as set out by Mr. Meade and Mr. Fleming,⁴ and a further note by Dr. T. Wilson⁵ underlined the fact that agreement among economists had not yet been reached. I now propose to examine the Hotelling-Lerner solution, as I shall call it, in greater detail and to point out the fundamental defects which I believe it contains.

II. ISOLATION OF THE PROBLEM

Any actual economic situation is complex and a single economic problem does not exist in isolation. Consequently, confusion is liable to result because economists dealing with an actual situation are attempting to solve several problems at once. I believe this is true of the question I am discussing in this article. The central problem relates to a divergence between average and marginal costs. But, in any actual case, two other problems usually arise. First, some of the costs are common to numbers of consumers and any consideration of the view that total costs ought to be borne by consumers raises the question of whether there is any rational method by which these common costs can be allocated between consumers. Secondly, many of the so-called fixed costs are in fact outlays which were made in the past for factors, the return to which in the present is a quasi-rent, and a consideration of what the return to such factors ought to be (in order to discover what total costs are) raises additional problems of great intricacy.⁶ These are, I think, the other two problems which usually exist simultaneously with a divergence between average and

¹ It is true that Professor Ragnar Frisch criticised Professor Hotelling's article shortly after it appeared. But, though much of interest emerged in Professor Frisch's note and the subsequent discussion with Professor Hotelling, it appears, at least to the non-mathematical reader, that Professor Frisch's attack was not directed at the foundations of Professor Hotelling's argument but rather to what seemed to him to be defects in its formulation. See Ragnar Frisch, "The Dupuit Taxation Theorem" and "A Further Note on the Dupuit Taxation Theorem" and H. Hotelling, "The Relation of Prices to Marginal Costs in an Optimum System" and "A Final Note", *Econometrica*, April, 1939.

² See C. L. Paine, "Some Aspects of Discrimination by Public Utilities," *Economica*, November, 1937.

³ See E. W. Clemens, "Price Discrimination in Decreasing Cost Industries," *American Economic Review*, December, 1941.

⁴ "Price and Output Policy of State Enterprise: A Comment," *Economic Journal*, April, 1945.

⁵ "Price and Output Policy of State Enterprise," *Economic Journal*, December, 1945.

⁶ See F. A. Hayek, *Collectivist Economic Planning*, the section entitled "The Criterion of Marginal Costs," pp. 226-231.

marginal costs. They are, however, separate or at least separable questions. Thus, the example used by Professor Hotelling, the problem of pricing in the case of a bridge,¹ is in fact an extremely complex case rather than the simple one it appears to be on the surface.

I propose to isolate the question at issue by examining an example in which, although there is a divergence between marginal and average costs, all costs are attributable to individual consumers; in which all costs are currently incurred; and in which, to avoid a further complication which might trouble some readers concerning the meaning of marginal cost, all factors are in perfectly elastic supply.

Assume that consumers are situated around a central market in which a certain product is available at constant prices. Assume that roads run out from the central market but that each road passes only one consumer of the product. Assume also that a carrier can carry on each journey additional units of the product at no additional cost (at least to a point beyond the limit of consumption of any individual consumer).² Assume further that the product is sold at the point of consumption. It is clear that the cost of supplying each individual consumer would be the cost of the carrier plus the cost at the central market of the number of units consumed by that particular consumer of the product. The marginal cost would be equal to the cost of a unit of the product at the central market. The average cost would be higher than the marginal cost and would decline as the cost of the carrier was spread over an increasing number of units.³ The Hotelling-Lerner solution would presumably be that the amount which consumers should pay for each unit of the product should be equal only to marginal cost. The effect would be for consumers to pay for the cost of the product at the central market and for the Government, or rather the taxpayer, to bear the costs of carriage. It is the validity of this solution that I wish to examine. But first it is necessary to turn to a consideration of fundamentals.

III. WHAT IS OPTIMUM PRICING ?

I take a pricing system to be one in which individual consumers have command over various sums of money which they use to obtain goods and services by spending this money in accordance with a system of prices. It is, of course, not the only method of allocating goods and services, or more properly, the use of factors of production between consumers. It would be possible for the Government to

¹ This example was originally used by Dupuit in an article in the *Annales des Ponts et Chaussées* (1844) which was reprinted in *De l'utilité et de sa mesure* (1933).

² An indivisibility must be present in all cases of decreasing average costs. Although I assume that it is not possible to employ less than a carrier, his services may be assumed to be in perfectly elastic supply in that payment will vary proportionately with the time he is employed and that the additional employment of carriers will not raise their price.

³ The assumption that the total costs consist of two distinct kinds, one of which enters into marginal cost while the other does not, is not essential. We could have assumed that the costs of carriage increased as additional units were carried but that the marginal costs of carriage were below the average. It will, however, aid in exposition if we keep to the original assumption.

decide what to produce and to allocate goods and services directly to consumers. But this would have disadvantages as compared with the use of a pricing system. No Government could distinguish in any detail between the varying tastes of individual consumers (which is, of course, why a "points" system of rationing in wartime is adopted for many items)¹; without a pricing system, a most useful guide to what consumers' preferences really are would be lacking; furthermore, although a pricing system puts additional marketing costs on to consumers and firms, these may in fact be less than the organising costs which would otherwise have to be incurred by the Government.² These are the reasons which would lead an enlightened Government to adopt a pricing system—and we shall see later that they are very relevant to the problem we are considering.

If it is decided to use a pricing system, there are two main problems that have to be solved. The first is how much money each individual consumer shall have—the problem of the optimum distribution of income and wealth. The second is, what is to be the system of prices in accordance with which goods and services are to be made available to consumers—the problem of the optimum system of prices. It is with the second of these problems that I am concerned in this article. The first is partly, though not entirely, a question of ethics. But it is important to realise that there are these *two* problems and that both have to be solved if a pricing system is to produce satisfactory results. As I am in this section dealing with the second only of these problems, I shall assume that the distribution of income and wealth can be taken to be the optimum.

For an individual consumer, the system of prices represents the terms on which he can obtain the various goods and services. According to what principles should prices be determined? The first would appear to be that for each individual consumer the same factor should have the same price in whatever use it is employed, since otherwise consumers would not be able to choose rationally, on the basis of price, the use in which they prefer a factor to be employed. The second would appear to be that the price of a factor should be the same for all consumers since otherwise one consumer would be obtaining more for the same amount of money than another consumer. If the optimum distribution of income and wealth had been obtained, the effect of charging different prices for the same factor to different people would be to upset that distribution. It is a more subtle application of this second rule that the price fixed should be such as to allow factors to go to the highest bidders. That is, the price should be the one which equates supply and demand and it should be the same for all consumers and in all uses.³ This implies that the amount paid for a product should be equal to the value of the factors used

¹ Compare Lerner, *op. cit.*, p. 53.

² See R. H. Coase, "The Nature of the Firm," *Economica*, November, 1937.

³ Compare also Lerner, *op. cit.*, pp. 45-50.

in its production in another use or to another user. But the value of the factors used in the production of a product in another use or to another user is the cost of the product. We thus arrive at the familiar but important conclusion that the amount paid for a product should be equal to its cost. It will be this principle which will enable us to discuss the problems of individual pricing without tracing throughout the economic system all the changes consequent upon the alteration of a single price.

IV. THE ARGUMENT FOR MULTI-PART PRICING

How does this general argument for basing prices on costs apply to the case we are considering—the case of decreasing average costs? The writers whose views I am considering seem to assume that the alternatives with which one is faced are to charge a price equal to marginal cost (in which case a loss is made) or to charge a price equal to average cost (in which case no loss is made). There is, however, a third possibility—multi-part pricing. In this section, I set out the argument for multi-part pricing when there are conditions of decreasing average costs.

It is clear that if the consumer is not allowed to obtain at the marginal cost additional units of products, produced under conditions of decreasing average costs, he is not being allowed to choose in a rational manner between spending his money on consuming additional units of the product and spending his money in some other way, since the amount which he would be called upon to spend to obtain additional units of the product would not reflect the value of the factors in another use or to another user. But for the same reason it can be argued that the consumer should pay the total cost of the product. A consumer does not only have to decide whether to consume additional units of a product; he has also to decide whether it is worth his while to consume the product at all rather than spend his money in some other direction. This can be discovered if the consumer is asked to pay an amount equal to the total costs of supplying him, that is, an amount equal to the total value of the factors used in providing him with the product. To apply this argument to our example, the consumer should not only pay the costs of obtaining additional units of the product at the central market, he should also pay the cost of carriage. How can this be brought about? The obvious answer is that the consumer should be charged one sum to cover the cost of carriage while for additional units he should be charged the cost of the goods at the central market. We thus arrive at the conclusion that the form of pricing which is appropriate is a multi-part pricing system (in the particular case considered, a two-part pricing system), a type of pricing well known to students of

public utilities and which has often been advocated for just the reasons which I have set out in this article.¹

Now it is, I think, extremely significant that none of the advocates of the Hotelling-Lerner solution should have examined the possibilities of multi-part pricing as a solution of the problem they are considering. They write as though the only possible method of pricing is to charge a single price per unit and that the problem they have to solve is what that price should be. It may be that their reason for not examining multi-part systems of pricing was that they were sure they had in fact found the optimum system of pricing. We must therefore compare the results of adopting the Hotelling-Lerner solution with those of using multi-part pricing.

V. MULTI-PART PRICING COMPARED WITH THE HOTELLING-LERNER SOLUTION

The Hotelling-Lerner solution, if adopted in the case of my example, would mean that the cost of the goods at the central market would be paid for by consumers but that the cost of carriage would be borne out of taxation. My objections to this solution as compared with adopting a two-part system of pricing fall under three heads: first, that it leads to a maldistribution of the factors of production between different uses; second, that it leads to a redistribution of income; and third, that the additional taxation imposed will tend to produce other harmful effects.

First, the Hotelling-Lerner solution would appear to remove the means whereby consumers make a rational choice between the use as carriers and the use for some other purpose of the factors which enter into the cost of carriage. In this use, the factor would be free; in another use (provided that it entered into marginal cost) it would have to be paid for. Similarly, this solution would mean that consumers would choose between different locations without taking into account that the costs of carriage vary as between one location and another.

The answer which the supporters of the Hotelling-Lerner solution would make to this objection would appear to be that the Government should estimate for each individual consumer in my example whether he would buy the product and also what location he would prefer,

¹ See H. F. Havlik, *Service Charges in Gas and Electric Rates*, and references therein. See also Barnes, *op. cit.*, p. 588. Havlik himself appears to support the view that costs which are attributable to individual consumers should be charged to those consumers. He does, however, use a variant of the Hotelling-Lerner solution when dealing with the case in which what he terms marginal customer costs, "the additional costs of taking on a customer and maintaining the connection, without actually supplying him with electricity," are less than average customer costs. In this case, "revenues from a customer charge would be less than total customer costs" and it would be "justifiable" for the Government "to give a subsidy" (pp. 92-93). Havlik does not discuss how the subsidy ought to be raised. In this article I am, however, concerned simply with the case in which all costs are attributable to individual consumers and to this case Havlik's variant of the Hotelling-Lerner solution, which is concerned with common costs, does not apply.

if he had to pay the total cost.¹ Only if the consumer would thus have been prepared to pay the total cost of supplying the product to a given location will provision for supplying it to that location be made under the Hotelling-Lerner scheme. Professor Hotelling points out that to decide whether the demand was sufficient to warrant the costs of building a bridge "would be a matter of estimation of vehicular and pedestrian traffic originating and terminating in particular zones, with a comparison of distances by alternative routes in each case, and an evaluation of the saving in each class of movement".² If it were possible to make such estimates, at low cost and with considerable accuracy and without knowledge of what had happened in the past when consumers had been required to pay the total cost, this would be likely to lead, in my opinion, not to a modification of the pricing system but rather to its abolition. The pricing system, as I pointed out earlier, is a particular method of allocating the use of factors of production between consumers and the arguments for its adoption derive their main force from the view that such estimates of individual demand by a Government would be very inaccurate. It should be noted here that neither Professor Lerner nor Mr. Meade in fact make any considerable claim for the accuracy of these estimates. Indeed, Professor Lerner in an earlier section of his book argues for a pricing system on precisely the grounds that it is impossible for a Government to make such estimates.³

Neither Professor Hotelling, Professor Lerner nor Mr. Meade give in my view sufficient weight to the stimulus to correct forecasting which comes from having a subsequent market test of whether consumers are willing to pay the total cost of the product. Nor do they recognise the importance of the aid which the results of this market test give in enabling more accurate forecasts to be made in the future. Professor Hotelling says: "Defenders of the current theory that the overhead costs of an industry must be met out of the sale of its products or services hold that this is necessary in order to find out whether the creation of the industry was a wise social policy. Nothing could be more absurd". This, he says, "is an interesting historical question".⁴ And he adds later: "When the question arises of building new railroads or new major industries of any kind or of scrapping the old, we shall face, not a historical, but a mathematical and economic problem".⁵ Nowhere in Professor Hotelling's article does one find recognition of the fact that it will be more difficult to discover whether to build new railroads or new industries if one does not know whether the creation of past railroads or industries was

¹ See Lerner, *op. cit.*, pp. 186-199 and Meade, *loc. cit.*, pp. 324-325. And it would seem that Professor Hotelling's mathematical formulation comes to much the same thing, see *loc. cit.*, p. 262 and p. 268.

² *Loc. cit.*, pp. 247-248.

³ *Op. cit.*, pp. 61-64.

⁴ *Loc. cit.*, p. 268.

⁵ *Loc. cit.*, p. 269.

wise social policy. And it is certainly not absurd to take into account the fact that decisions are likely to be better made if afterwards there is some test of whether such decisions were wise social policy than if such an enquiry is never made.

I do not myself believe that a Government could make accurate estimates of individual demand in a regime in which all prices were based on marginal costs. But it may be well to consider what would be likely to be done if a Government attempted to carry out the Hotelling-Lerner policy. Consider the example I have been discussing. Certain consumers would have to be designated as able to buy the product. The Government would then undertake to pay whatever costs for carriage were incurred on behalf of these consumers. A Government would have a difficult task in deciding where to draw the line. If it adopted a narrow view of the qualifications required of those allowed to consume this product, consumers who really preferred to use the factor employed in the carriage of the product in this way, would be prevented from doing so. If on the other hand it was liberal in its view, many would find that they were no longer deterred from consuming the product or living at a greater distance from the central market by the cost of the factor used in carriage, that is, by its value in alternative uses or to an alternative user. It would, of course, be possible for the Government to follow a liberal policy to one class of consumers and a narrow policy to others at the same time. It is not easy to guess what policy a Government would be likely to follow. But in Great Britain I suspect that it would tend to err on the liberal side and that there would consequently be too great an employment of the factor used in the carriage of the product.¹

But even if the Government were able to estimate individual demands accurately, the Hotelling-Lerner solution would be subject to another objection. The Government is supposed to estimate which consumers would be willing to pay the cost of carriage (and we shall assume for the moment that it estimates correctly). But it does not in fact ask these consumers to pay this sum. This money is then available for these consumers to spend on some other commodity. Consumers who buy products which are produced under conditions of decreasing average costs will therefore obtain products for any given expenditure embodying a greater value of factors than those who do not. There is a redistribution of income in favour of consumers of goods produced under conditions of decreasing average costs.²

There would not, I think, be any dispute that what is equivalent to a redistribution of income does in these circumstances take place. Professor Hotelling is, however, the only one of the writers whose

¹ All the essentials of this argument have been set out in another connection by Cannan, in his *History of Local Rates in England* (Second Edition). See Chapter VIII, "The Economy of Local Rates" and especially his remarks on p. 187.

² This assumes that the taxes from which the loss is made good do not fall entirely on consumers of goods produced under conditions of decreasing average costs. This is, of course, no because it is proposed that the taxes to be used should be income and similar taxes.

views I am examining who deals explicitly with this point. I shall therefore examine his reasons for thinking that this objection is of little substance. First of all, I believe that Professor Hotelling considers this objection to be largely irrelevant because the initial distribution of income, at least in the United States, is not in fact the optimum. He does not directly say this but it is evident from his whole approach to the question.¹ When he argues that the loss resulting from an application of the marginal cost rule should be borne out of income taxes, inheritance taxes and taxes on the site value of land, he is, I think, partly doing so because he believes that the wealthy and the landlords already have too large a share of the total wealth and income. But why should consumers of goods produced under conditions of decreasing average costs be the only ones to benefit from this redistribution? The reason why Professor Hotelling sees little harm in using pricing policy partly as a means of redistributing income is, I think, that he does not consider the distinction between consumers of products produced under conditions of decreasing average costs and consumers of products produced under conditions of constant or increasing average costs to be of great importance. He argues that a Government carrying out his policy would undertake a great variety of public works. "A rough randomness in distribution would be ample to ensure such a distribution of benefits that most persons in every part of the country would be better off by reason of the programme as a whole".² This comes to saying that in a regime of marginal cost pricing, all consumers will buy goods produced under conditions of decreasing average costs; that what is lost by any particular consumer in the redistribution involved in one scheme will be offset as a result of the redistribution following on another scheme; and that as a consequence, the significant redistribution would be from the wealthy and landlords to all others. It would be indeed pedantic to object to the achievement of a desirable aim merely because it is done in an unusual way. But this argument stands or falls by the assumption that there will be no significant redistribution as between consumers of different kinds of products. There is no reason to assume that this will be so. The gain which individual consumers would derive from the Hotelling-Lerner policy would depend on the extent to which they were willing to pay the total cost for products produced under conditions of decreasing average costs (given their initial income); and on the absolute divergence between marginal and average costs in the case of these goods; and on the extent to which the additional income derived as a result of the Hotelling-Lerner policy was spent on goods produced under conditions of decreasing average costs; and on the absolute divergence between marginal and average costs in these cases. It would be possible to appraise the character of the redistribution only

¹ See, for example, his remarks, *loc. cit.*, p. 259.

² *Loc. cit.*, p. 259.

after a detailed factual enquiry. There seems, however, no reason to suppose that it would be a negligible redistribution.

The public utility industries provide some of the most striking instances of products supplied under conditions of decreasing average costs. Let us assume that they are the only industries in which these conditions are found. Consumers who live in regions of low density of population would probably not be willing to pay the total costs of supply of public utility services which in their case would be very high, and would consequently gain nothing as a result of the Hotelling-Lerner policy because they would not be given the services. Consumers who live in cities would find their gains limited because, equipment there being relatively intensively used, the divergence between marginal and average cost would probably be much less than elsewhere; while since they probably already use all the public utility services, the additional income would be likely to be spent on other than public utility services. It would be those living in small towns, which have some but not all the public utility services and where the divergence between marginal and average cost was great, who would, I think, tend to gain most from the Hotelling-Lerner policy. I see no reason to suppose that there would not be some redistribution, possibly very considerable, as a result of this policy if it were generally applied. Professor Hotelling admits this possibility but claims that by a subsequent redistribution a situation could be produced in which everyone was better off than before.¹ He does not describe how this redistribution would be effected. But it would obviously be an inferior arrangement to adopting a multi-part system of pricing which makes it unnecessary to have subsequent redistributions of income at all. I am, however, at a loss to understand how ordinary taxation procedures could be used to redistribute income from consumers of goods produced under conditions of decreasing average costs to all other consumers. An attempt to do this might be made by means of a tax on the consumption of goods produced under conditions of decreasing average costs. But this would either be equivalent to introducing multi-part pricing (if a lump sum tax was levied on consumers) or, if a tax per unit of consumption is imposed, would bring about a divergence between the amount paid for additional units and marginal cost, a result which it is the object of the Hotelling-Lerner solution to avoid.

I now turn to the third objection to the Hotelling-Lerner solution. The loss incurred is, it is said, to be made good by increased taxation. The taxes which Professor Hotelling and the others who support this solution have in mind are income taxes, inheritance taxes and taxes on the site value of land. Let us assume for the time being that the form of tax used to make good the loss is an income tax. But income taxes are usually so framed that marginal units of income are taxed and therefore an income tax will have the same unfortunate

¹ *Loc. cit.*, pp. 257-258.

effect on consumers' choice as a tax on goods and will produce results similar in character to those which follow from charging an amount for additional units of output greater than marginal cost. After the appearance of Professor Hotelling's first article, he seems to have had his attention drawn to this point by Professor Lerner. Professor Hotelling says in the discussion with Professor Frisch which followed his original article that "an income tax of the usual kind is a sort of excise tax on effort and on waiting, as well as on other less defensible ways of getting an income. An income tax is to some extent objectionable because it affects the choice between effort and leisure and the choice between immediate and postponed consumption. Thus some of the same kind of loss attaches to an income tax as to excise taxes proper. How serious this effect may be is a question for factual research; but there is some reason to suppose an income tax superior to excise taxes on individual commodities in this respect" ¹ Professor Hotelling does not give any reasons why he thinks income taxes will tend to be less harmful in this respect than excise taxes. It may be so but it is obviously desirable to know what the circumstances are in which income taxes are less harmful and when they are likely to be found before applying the Hotelling-Lerner solution—if, that is, this policy would lead to increases in income taxes.² Professor Hotelling attempts to avoid this difficulty by suggesting that "the public revenues, including those required to operate industries with sales at marginal cost, should be derived primarily from rents of land and other scarce goods, inheritance and windfall taxes, and taxes designed to reduce socially harmful consumption".³ This is not a very satisfactory solution. First of all, it assumes that such taxes will be sufficient to raise the sum required. Secondly, it assumes that the disturbance to the distribution of income and wealth due to the additional taxation on those who derive their incomes in these ways is better than the loss which would occur if the additional taxation was spread more evenly over people in the country. Alternatively, Professor Hotelling's suggestion involves the assumption that the optimum distribution of income and wealth has not already been achieved and that those who derive their incomes in these ways have not been taxed enough in the past. But, of course, if this is so, this further taxation is desirable quite apart from questions of pricing policy and there is little need to link it to the problem of pricing under conditions of decreasing average costs. Furthermore, the question would still remain of how the pricing problem should be solved

¹ *Econometrica*, April, 1939, pp. 154-155. I would add that income taxes also affect the choice between doing a job for oneself and employing some one to do it for one and in consequence an income tax dissipates some of the advantages of specialisation. See F. W. Paish, "Economic Incentive in Wartime," *Economica*, August, 1941, p. 244.

² This problem seems to have been overlooked in the theory of public finance. The usual discussion of the burden of indirect taxation assumes that the alternative is a lump sum payment. See for example, M. F. W. Joseph, "The Excess Burden of Indirect Taxation", *Review of Economic Studies*, June, 1939. Compare also J. R. Hicks, *Value and Capital*, p. 41.

³ *Econometrica*, April, 1939, p. 155.

when the optimum distribution of income and wealth was achieved. Professor Hotelling's suggestion for avoiding the loss which would result from increased income taxes is one of limited validity.

In this section, I have compared the results of using a multi-part pricing system with those which would follow from the Hotelling-Lerner policy. I have shown that the Hotelling-Lerner solution would bring about a maldistribution of the factors of production, a maldistribution of income and probably a loss similar to that which the scheme was designed to avoid, but arising out of the effects of increased income taxes. These results would be avoided by the use of a multi-part system of pricing.

VI. AVERAGE COST PRICING COMPARED WITH THE HOTELLING-LERNER SOLUTION

Professor Hotelling, Professor Lerner, Mr. Meade and Mr. Fleming do not seem to have realised that many of the problems which they were trying to solve could have been dealt with by means of multi-part pricing and that this system of pricing would in fact have produced results not open to the objections which could be brought against the Hotelling-Lerner solution. But in fairness to them it must be pointed out that their attack was directed against charging a single price which was based on average cost and not against multi-part pricing. Is the argument valid in this case? If multi-part pricing is not possible, is it not preferable to adopt the Hotelling-Lerner solution rather than to adopt pricing based on average costs?

In this case, the argument for the Hotelling-Lerner solution is considerably strengthened—and this in two respects. First of all, it is clear that if consumers are not allowed to buy additional units at marginal cost, there is a maldistribution of the factors of production. The nature of the gain which would accrue in this respect through the adoption of the Hotelling-Lerner solution has already been discussed in earlier sections.¹ The second respect in which the argument for the Hotelling-Lerner solution is strengthened concerns the effectiveness of average cost pricing in providing a market test of the willingness of consumers to pay the total costs. In the previous section, I pointed out that multi-part pricing furnished such a test. How does this apply to the case of average cost pricing? The fact that consumers are willing to buy at a price which covers average costs certainly shows that they prefer to obtain that value of factors in that form rather than in any other which is open to them.² The difficulty is, as Professor Hotelling points out, that the reverse is not true. It has long been known to economists that in cases in

¹ It might be thought that if all goods were priced on an average cost basis, since all prices would be raised above the marginal cost level, the choice of the consumers would be unaffected. But this would be true only if the rise in price were proportionate to marginal cost and this is most unlikely to be true. See the discussion between Professor Frisch and Professor Hotelling in *Econometrica*, April, 1939.

² Compare Wicksteed, *The Common Sense of Political Economy*, pp. 675-676.

which the demand curve lies at all points below the average cost curve, it may be possible, by means of price discrimination, to raise the average revenue sufficiently to bring it up to average cost. If therefore pricing is on an average cost basis, there will be certain cases in which consumers would have been willing to pay the total cost but in which, owing to the limitations of this particular method of pricing, this would not be possible. Production could be undertaken in such cases if the Hotelling-Lerner policy was followed.

These are the advantages of the Hotelling-Lerner solution as compared with average cost pricing. But the disadvantages which were examined in the previous section still remain. These have to be balanced one against the other. The first advantage which the Hotelling-Lerner solution possesses as compared with average cost pricing is that it allows a better choice at the margin in consumption. But this advantage would be reduced and might be offset by the loss which would result if the Hotelling-Lerner solution involved increased income taxes. The second advantage was that a Government could undertake production in cases in which consumers would be willing to pay the total cost but which could not be undertaken with average cost pricing. But it has to be remembered that this policy is one in which the Government estimates individual demands and is therefore subject to the limitations which we discussed in the previous section. Not all cases in which production would not be undertaken with average cost pricing ought to be undertaken. A Government which made many errors in its estimates of individual demands could easily offset any good such a policy might produce. Average cost pricing may prevent some things from being done which perhaps ought to be done but it is also a means of avoiding certain errors in production, some of which would inevitably be made if the Hotelling-Lerner policy were followed. As I indicated earlier, I do not myself believe that it is reasonable to assume that the Government could make accurate estimates of individual demands if all prices were based on marginal cost. Finally, there is the redistribution of income and wealth which the Hotelling-Lerner solution would involve and which, as I pointed out in the previous section, would appear to be difficult to rectify in the absence of multi-part pricing, without reintroducing the kind of tax which would prevent that rational choice at the margin which the Hotelling-Lerner solution aims to achieve.

It will be seen from the discussion in this section that the question of average cost pricing as against the Hotelling-Lerner solution does not present any clear-cut case. The claim which is made for the Hotelling-Lerner solution as inevitably superior to average cost pricing must therefore be rejected.

VII. THE PROBLEMS THAT REMAIN

In this article, I have been examining the problem of pricing under conditions of decreasing average costs. I have, however, confined

myself to one particular case, that in which all costs are attributable to individual consumers and in which all costs are currently incurred. Given these assumptions, I showed that the Hotelling-Lerner solution was inferior to a multi-part system of prices and that as compared with average cost pricing the balance of advantage was not clear. The next steps would appear to be to examine the problem of pricing when there are common costs. If there are costs which cannot be attributed to individual consumers, does the Hotelling-Lerner solution then come into its own, as Mr. H. F. Havlik has suggested ?¹ Should such common costs be borne out of taxation ? Or is the right approach to discover some basis in accordance with which these costs should be allocated between consumers ? Finally, there is the question of expenditures which have already been incurred for factors. Are these costs to be borne out of taxation ? Or should they be borne by consumers ? If the analysis in this article is accepted, these would seem to be the next questions to be examined.

¹ See footnote 1 on page 174.

A Further Note on the British Balance of Payments

By C. F. CARTER and T. C. CHANG

ALL estimates of the British balance of payments in the coming years are bound to be little more than guesses; our excuse for adding to their number is that it seems to us that a few extra rays of light can be focused on the dark places of the future by examining the inter-war trading position. Our calculations are concerned with composite entities such as "total British exports"; they are therefore far simpler than the real structure of trade. We feel, however, that the approximation is a useful one. We start by considering the position in 1936-1938 as it would have been under full employment. Mr. Kaldor, in his Appendix to Sir William Beveridge's *Full Employment in a Free Society*, makes a similar calculation, but apparently in less detail.

I. VISIBLE TRADE

It seems reasonable to suppose that the main factors affecting British exports are the price at which we offer our goods, the price at which the other major industrial countries offer their goods, the level of income in the purchasing countries, and their policy with regard to tariffs, quotas and exchange rates. The effect of exchange rate changes is partly allowed for by reducing money values to sterling. The effect of tariff policy can be traced in the trade figures for a single country, but cannot be estimated for exports as a whole; it is therefore ignored in the following calculations. We have obtained from a variety of sources approximate indices of "world real income" (a mean of series for thirteen principal countries, weighted by the importance of the areas which they represent) and of the export price for manufactured goods of four principal competitors—U.S.A., France, Germany and Japan. We find, for the period 1924-38:

$$\begin{aligned} \log (\text{quantity of total exports of produce and manufactures of} \\ \text{the U.K.}) = & -0.80 \log (\text{export price}) \\ & + 1.50 \log (\text{world real income}) \\ & + 1.36 \log (\text{competitors' price}), \end{aligned}$$

the multiple correlation being $R = 0.93$.

The price elasticities in this equation are such that British export loses less by rising prices than do her competitors. This is perhaps not unreasonable if one considers the strong ties between the U.K. and its largest markets in the Empire. Here and elsewhere all series are taken with zero mean and with linear trend eliminated. In the present state of knowledge of the theory of time series, it is impossible to suggest a likely margin of error for results like this. Their justification must be that they are reasonably near one's *a priori* expectations.

All the numerical results of this article, being obtained from similar time series over a very short period, must be regarded as statistically precarious.

By a similar reasoning, taking the cost of living index as the best representative available of the prices of goods competing with imports (such competition taking place, of course, over only part of the range of imports), and taking home employment as representative of home income, with which it is very highly correlated after elimination of trend, we obtain :

$$\begin{aligned}\log (\text{import quantity}) = & -0.41 \log (\text{import price}) \\ & + 1.43 \log (\text{home employment}) \\ & + 0.67 \log (\text{cost of living}),\end{aligned}$$

with $R = 0.75$. Certain types of imports, e.g., raw cotton, are, of course, correlated with exports; we have not attempted to correct for this effect, which lowers the multiple correlation.¹

Now any change in home employment or income will affect the balance of visible trade by altering the prices of exports and imports and also by altering their quantities through affecting all the six items to the right of the last two equations. The interlocking of all these items is too complicated to allow of any simple treatment; at the risk of statistical heresy, we suggest that an approximate result can be obtained from the following simple-minded assumptions :

(i) that export price and import price vary with home employment according to their simple regressions over the inter-war period :

$$\log (\text{export price}) = 1.38 \log (\text{home employment}), r = 0.83.$$

$$\log (\text{import price}) = 2.05 \log (\text{home employment}), r = 0.91.^2$$

(ii) that the prices of our competitors rise with rising world real income, but not very steeply; we use the empirical relationship for 1924-38 :

$$\log (\text{competitors' price}) = 0.50 \log (\text{world real income}), r = 0.64.$$

(iii) that the prices of goods competing with imports rise with rising home employment :

$$\log (\text{cost of living}) = 0.77 \log (\text{home employment}), r = 0.74.$$

(iv) that in an "open" system Britain is not very likely to achieve full employment unless world income and employment also rise. The relationship over the inter-war period was :

$$\log (\text{world real income}) = 1.74 \log (\text{home employment}), r = 0.85.$$

We shall, however, give results on three alternative assumptions :

A—that world income varies according to this equation.

B—that $\log (\text{world real income}) = 0.50 \log (\text{home employment})$; i.e., that full employment at home requires some increase in world income, but not so great an increase as under (A).

¹ T. C. Chang, "The British Demand for Imports in the Inter-war Period," *Economic Journal*, June, 1946, p. 206.

² Import price depends upon home employment because of the dominance of the British market.

C—that Britain succeeds in “isolating” herself from depression abroad, and that therefore home employment can vary without a variation in world income.

On the above assumptions, a one per cent. change in home employment would be associated with the following changes :

% change in	Assumption A	Assumption B	Assumption C
Export Price ..	+ 1.38	+ 1.38	+ 1.38
World Income ..	+ 1.74	+ 0.50	0
Competitors' Price	+ 0.87	+ 0.25	0

Using our first equation, export quantity therefore changes by :

$$+ 2.69 \quad - 0.01 \quad - 1.10$$

Starting from the 1936–38 average export value, and allowing for the increase in export price, we deduce that a one per cent. change in home employment would be associated with an increase of export value by £20.2 millions on assumption A, by £6.8 millions on assumption B, and by £1.4 millions on assumption C.

A similar calculation for imports shows, for a one per cent. rise in home employment, a 2.05% rise in import price and a 0.77% rise in the “competitive” home price level. Import quantity therefore changes by + 1.11%, and import value (starting from the 1936–38 average value) by £27.9 millions.

II. OTHER ITEMS IN THE BALANCE OF PAYMENTS

Shipping services can be related to real world income and to freight rates by an equation :

$$\log(\text{volume of shipping services}) = 1.13 \log(\text{world real income}) - 0.089 \log(\text{index of freight rates}).$$

The very low price elasticity is doubtless due to the dominant position of British shipping. Freight rates follow the equation

$$\log(\text{freight rates}) = 2.85 \log(\text{home employment}).$$

They are of course related to world income as well, but this equation will do as an approximation for this small term.

The money values of “interest receipts” and “other receipts” (mainly commissions and insurance) were both highly correlated with world money income, the regression coefficients being + 1.31 and + 1.80 respectively. We find that

$$\log(\text{world money income}) = 1.18 \log(\text{world real income})$$

over the period, and we thus obtain the following increases associated with a one per cent. change in home employment, starting from the average values of 1936–38 :

	Assumption A	Assumption B	Assumption C
Shipping Receipts ..	+ 4.56%, or £4.8 mn.	+ 3.16%, or £3.3 mn.	+ 2.60%, or £2.7 mn.
Interest, etc. ..	+ 2.69%, or £5.5 mn.	+ 0.77%, or £1.6 mn.	nil
“Other Receipts” ..	+ 3.70%, or £1.4 mn.	+ 1.06%, or £0.4 mn.	nil

III. THE BALANCE OF PAYMENTS UNDER FULL EMPLOYMENT IN 1936-38

The net result of our calculations so far is that to a one per cent. change in employment there would correspond changes in the balance of payments on current account as follows:

		<i>Assumption A</i>	<i>Assumption B</i>	<i>Assumption C</i>
Exports	.. ..	+ £20.2 mn.	+ £6.8 mn.	+ £1.4 mn.
Imports	.. ..	- £27.9 mn.	- £27.9 mn.	- £27.9 mn.
Shipping, Interest and				
Other Receipts	+ £11.9 mn.	+ £5.3 mn.	+ £2.7 mn.

Net Increase in

Favourable Balance	+ £4.0 mn.	- £15.8 mn.	- £23.8 mn.
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If we recklessly assume that these relations would hold for a ten per cent. increase in employment, we find that full employment with world full employment would have decreased our adverse balance by £40.0 mn.—nearly cancelling the average adverse balance for 1936-38; full employment with partial world recovery might have increased the adverse balance by £160.0 mn.; and full employment from a world remaining depressed despite our unrestricted imports might have increased it by £240.0 mn. These are - 8%, + 32% and + 48% of pre-war visible exports. The last figure is, of course, ridiculous; but with all their imperfections, these figures underline the urgency of our interest in world full employment under an "open" trading system, and the impossibility of avoiding strict import control if it be supposed that we can maintain full employment in a depressed world.

IV. SOME GUESSES FOR 1950

None of the relations so far discussed need apply in 1950. For some of them, however, the *a priori* reasons for change are not very strong. Our first equation, for instance, says that the amount we sell depends (linearly for small proportional changes) on the income of the buyers and the relative price-levels of our exports and competitive exports. Some such relation must hold in any trading world; and it is difficult to see any principle on which changes in the coefficients could be estimated.

Now we are bound to assume that the pre-war trends of our various quantities were broken off sharply when the war began; the war period introduces discontinuities. It will be simplest to split up our problem into three parts:

- (a) If 1936-38 trading conditions applied in 1946, with the current price level and full employment, what would the Balance of Payments be?
- (b) How is this altered by the known or estimated discontinuities introduced by the war, between 1936-38 trading conditions and 1950 trading conditions? These may be classified as:

(1) changes in importing habits, (2) changes in buying habits by our customers, (3) prospects for shipping services, and (4) prospects for interest and other receipts.

(c) What further price changes may be expected by 1950?

These three give the Balance of Payments with 1936-38 conditions and 1946 prices and employment; 1950 conditions and 1946 prices and employment; and 1950 conditions and 1950 prices and employment.

(a) The current price levels of imports and exports are approximately 202 and 194 relative to 1938, or about 203 and 201 relative to the average of 1936-38. Shipping freight rates we put at a "notional" level twice pre-war, eliminating any error caused by discussing shipping prospects in a different way under section (b). The level of "commissions, etc.," depends on the money value of business passing through London, and, given pre-war trading conditions, there seems no reason why this figure also should not be doubled. Interest receipts, on the other hand, are partly fixed in money terms; they will rise with rising employment, through rising equity yields and a lessening of defaults; but the effect of a rising price level is incalculable. Since we have used an independent estimate of current interest receipts, we put interest receipts in this section at their pre-war full employment value. At this point we drop overboard the extreme assumption C, and are left with:

	<i>Actual 1936-38 Values</i>	<i>1936-38 Conditions and Prices, but Full Employment</i>		<i>1936-38 Conditions, 1946 Prices, Full Employment</i>	
		A	B	A	B
Imports.. ..	£884 mn.	1,163	1,163	2,361	2,361
<i>Less:</i>					
Exports	496	698	564	1,403	1,134
Shipping Income ..	105	153	138	306	276
Interest, etc. ..	203	(258)	(219)	(258)	(219)
Miscellaneous ..	37	51	41	102	82
Deficit	43	(3)	(201)	(292)	(650)

(b) It is very difficult indeed to sort out changes in our importing habits from changes induced by war-time policies. It appears likely that we shall in future use a higher proportion of home-grown food; but if we are interested in the trade balance, a mere transfer of resources to the production of food for which we are a high-cost producer is not likely to bring much improvement. After examining the figures, we conclude that there might be a genuine saving of imports due to increased efficiency of home production, and not offset by a reduction

of exports to primary producing countries, of perhaps £60 mn.; a reduction beyond this point will almost certainly be necessary, but must come about by deliberately restricting the desire of the British consumer to buy abroad.

Most prophets avoid forecasting the future course of exports by making them the residual item, on which the whole burden of the deficit must be heaped in the form of an enormous increase. But perhaps we can keep a little closer to reality by making the following assumptions:

1. Trade concessions at economic conferences are not likely to be strongly in our favour.

2. The increase of productivity in British exporting industries is not likely to be exceptionally rapid during the next five years.

3. The imagination and drive of British business men will not do more than offset the losses of consumers' goods markets through war-time developments of industry abroad.

4. On the other hand, the war has eliminated some major competitors and left others in economic chaos; and this should confer a benefit exceeding the loss due to the long-term impoverishment of some markets. Further, there should be an expanding demand for producers' goods for the industrialisation of new countries. One might with great optimism look to a return of the volume of exports to the level of 1924, equal to the average of 1924-29 excluding 1926—the pre-depression standard; this is 23 per cent. above the 1936-38 level, and exports would be increased to £1,723 mn. on assumption A, or £1,393 mn. on assumption B, no correction for a further increase in export price having been made in this case. It will be noted that we have taken this 23% as an increase over the full employment 1936-38 level.

Pre-war shipping income varied between about 8% and 10% of the sum of imports and exports; it seems optimistic to put it at 7% in 1950. The severity of American competition is incalculable; but at least we cannot hope that the price-elasticity will remain as low as the value used above. At 7%, the income from shipping would be £282 mn. under assumption A or £259 mn. under assumption B.

Net interest receipts we estimate as follows:

Net U.K. receipts of dividends, interest, etc., 1945 (Cmd. 6707)	.. .. .	£97 mn.
Profits on overseas operations of British companies operating in part overseas, and other items omitted above	.. .. .	£54 mn.

Net 1945 interest, dividends and profits £147 mn.

By 1950 we shall have some further disinvestment; a possibility of increased interest rates for the service of the sterling debt; and a partial recovery of British investments in Far Eastern and other

devastated areas. On assumption A it seems reasonable to put the 1950 total at £140 mn.; on Assumption B we should expect some lower payments and defaults among Dominion and South American investments, perhaps reducing the total to £125 mn. Interest payments on the American loan might have to be subtracted for years after 1950.

Receipts from commissions and insurances we will leave at £100 mn. (A) and £80 mn. (B); for London may regain its pre-war position in this trade, and any decline in London's importance might be offset if the general level of world trade were higher. We thus obtain:

*1950 Conditions, Full Employment,
1946 Prices*

			A	B
Imports (if unrestricted)	..	..	£2,300 mn.	£2,300 mn.
<hr/>				
<i>Less :</i>				
Exports	..	..	1,723	1,393
Shipping Income	..	..	282	259
Interest Receipts (net)	..	..	140	125
Miscellaneous	..	..	100	80
<hr/>				
Deficit	..	..	55	443

(c) The final point is to consider the change in the terms of trade between now and 1950. They will doubtless move against this country during the period of food shortage, 1946-48. But it seems to us improbable that there is at the moment any considerable long-term trend in the terms of trade either way; and we therefore leave the above estimate to represent the 1950 position as regards the *ratio* of the deficit to imports or exports. If the price levels change considerably, the relative position of interest receipts will be worse; but the effect would not be likely to be large.

Our estimates on the receipts side have all been rather optimistic; we conclude that even with world full employment there would have to be further borrowing, or else a slight restriction of imports below the very high level to which British prosperity might bring them. (The figure quoted is double the present value, current volume being less than 65% of 1938.) On the other hand, if Britain is to have full employment and avoid foreign borrowing while the world (and especially the U.S.A.) is in partial recession, Column B suggests that we must either have an unprecedented increase in exports or else extensive import restrictions; though even then the level of imports could be considerably above the war-time figure. A 75% increase in exports is a good talking point; but it will remain important to keep in reserve a policy of import restriction, hoping that its use will not cause too much international friction.

Welfare Economics and Economic Policy

By A. RADOMYSLER

WHEN, some time ago, socialist economists were presented with the challenge that, without private ownership in the means of production, no rational economic calculation would be possible, they fell back on what came to be known as "the competitive solution". It was, it will be remembered, a simple device. Private ownership in the means of production would be abolished, but money, markets and prices would be retained; consumers would spend their incomes as they liked; and the managers of all socialised enterprises would be instructed to meet the demand for all goods until costs and prices were equal. An exact reproduction, in fact, of the conditions of perfect competition.

Since then, the discussion of socialism has moved to another plane. The practicability of a socialist economy is no longer denied. But other issues have come to the fore. Will socialism produce better results than capitalism or worse? What will happen to political freedom? The setting, as a consequence, has become broader than before; economic, psychological, social and political considerations are all linked together.

Alongside this development, however, there has also been another. The one-time juxtaposition of only *laissez faire* and socialism is no longer true. There is now a third scheme which differs from both. It is generally referred to as a planned economy. Its most important target is full employment.

Seen against this triple background, Mr. Lerner's recent book¹ is difficult to place. The views held by others, unfortunately, are not related to his; the term "planning", for example, in the modern sense, is never used. This rugged individualism makes it difficult, at first, to find one's way. The scheme that emerges appears to be closest to the third; but the reasons that he advances in its favour are unusual and the picture as a whole is not clear.

The author opens with a brief autobiographical statement. When this book was begun, about twelve years before publication, he believed in the completely collectivist economy. Since then, however, his views have changed. The history of Russia and Germany have convinced him that the maintenance and extension of democracy require more urgent attention than collectivisation; and that collectivisation, moreover, represents a danger to democracy. The completely collectivist economy, therefore, is no longer his ideal; collectivisation, on the other hand, is not ruled out. His present

¹ *The Economics of Control. Principles of Welfare Economics.* By Abba P. Lerner. The Macmillan Company. New York. 1944. xxii + 428 pp. \$3.75.

ideal, the controlled economy, "suggests the deliberate application of whatever policy will best serve the social interest, without prejudging the issue between collective ownership and administration or some form of private enterprise".

This book is thus different from what it was meant to be when it was begun. The earlier plan had been to solve each economic problem for the completely collectivist economy first, and then to compare it to a capitalist economy. This procedure, nevertheless, despite the change of view, is retained; and this, as will be shown, has several unfortunate consequences. But let us first summarise part of the argument.

The most important means to maximise welfare, to Mr. Lerner, is the equality of price and marginal cost. This could have been easily realised everywhere in the completely collectivist economy and this, apparently, would have been its chief merit. The equality of price and marginal cost then becomes the decisive test for the controlled economy too. But as public ownership threatens democracy, we must prefer to see it realised, wherever possible, under private enterprise. Where perfect competition rules, nothing need be done; it is realised automatically. We must only see to it that competition survives. Where competition is imperfect or where there is monopoly, we must either re-establish perfect competition under private enterprise, or, where this cannot be done, collectivise. Where marginal costs are below average costs, perfect competition is clearly impossible; hence we must nationalise industries where this is the case. Nationalisation may further be necessary, though of only some firms in an industry, to maintain perfect competition; public and private enterprise would then compete with each other. The government agents operating the nationalised industries or firms would be instructed to follow "the rule", i.e., they would equate price and marginal cost. Where marginal costs are below average costs, this will lead to losses, but for public enterprise this is irrelevant. Thus, the economy is no longer completely collectivist; but though some private enterprise is retained, the equality of price and marginal cost nevertheless rules everywhere. Private firms establish it by maximising profits; public managers by obeying the rule. In taxation also, and other fields, wherever this can be avoided, the equality between price and marginal cost must not be disturbed. This sums up the argument of the greater part of the book.

Leaving the merits of this for the present on one side, in approach and exposition, one can see, this bears all the marks of the author's original intentions. The completely collectivist economy is still treated first in the book and still occupies more space than anything else. The actual capitalist economy, on the other hand, is treated only incidentally, and so is the controlled economy. For his present intentions, however, this does not make sense. The level of his exposition, moreover, varies. A great part of it is very elementary;

much of it, in fact, is written as if it were for the beginner. Barter exchange, we are told, for example, would be extremely inconvenient, but can be avoided by the use of money. There are most painstaking explanations of things like the elasticity of demand. Other parts, on the other hand, are very advanced and compressed, and obviously inaccessible to anyone who is not thoroughly familiar with the issues. In some parts, this is also difficult to understand, the usual diagrams are avoided, whilst in other parts they are used.

The discussion is subdivided according to the conditions of costs. The author examines, for example, the problems that arise with one scarce factor under collectivism, under perfect competition, under capitalism, and in the controlled economy. Political observations, on the other hand, and some statements about reality, are made throughout. We thus get all these different elements in very rapid and ever-recurring succession, and this is one of the most striking features of the book.

These are, unfortunately, not simply faults of exposition, for his central theme becomes submerged. The different elements, for one thing, of the ideal that he recommends are torn apart, and as one tries to put them together, they do not fit. Sometimes there are contradictions, as in his statements about consumers' choice. At one extreme, freedom from government interference is all-important, because only then will satisfactions be maximised; at the other, many people are said to spend their incomes unwisely, and guardianship, in the form of rationing, may legitimately be applied. The optimum division of incomes is discussed rigidly apart from all else and the problem is not discussed again in relation to other matters. Who is to pay for the losses incurred by public enterprise? The answer is missing. When he comes to the maintenance of employment, there is, as was to be expected, only a faint echo of his earlier conclusions.

This last point is important. Unemployment is reached only after we are three-quarters through the book. Thus, what was in reality the most important single factor that brought *laissez faire* to an end, comes here near the end. The maintenance of employment, moreover, is now by many economists considered to be the most important objective of economic policy. Mr. Lerner, on the other hand, comes to his controlled economy, not from *laissez faire*, but from the completely collectivist economy. To him, the decisive reason for controlling the economy, it appears, is the establishment of equality between price and marginal cost.

With the question of practicability he is not concerned. "We shall assume a government that wishes to run society in the general interest and is strong enough to override the opposition afforded by any sectional interest". This attitude, too, one feels, is now inappropriate. Now that Mr. Lerner has returned from his completely collectivist world, he should, one feels, also concern himself with

what it is practicable to do. However, he merely wants to show "what is socially desirable". "We must leave to the politicians the political problems of compromise."

All these, however, are comparatively minor matters.

How much perfect competition do we find in the real world? And how much perfect competition could be restored under private enterprise? These are, evidently, important questions. We need an answer, for example, to know how large, in the controlled economy, the private and public sectors would be. The author's observations about reality are said to refer to "the actual world and the United States in particular". How much perfect competition does Mr. Lerner believe to exist in the actual world? This we cannot find out.

The author is aware, of course, of the existence of imperfect competition, but his references to it are scattered and few. He writes, for example, whilst discussing a one-scarce-factor world: "The infrequency of perfect competition is shown by the importance of salesmanship" (p. 78). Later, under indivisibilities: "Small indivisibilities in the actual world are perhaps more important than big ones of the public utility type. . . ." (p. 182); and this is followed by some observations on product differentiation and similar causes of imperfect competition. The problem of excessive varieties is discussed at length. He well recognises, in some places, that, even where there are many small firms, they may yet act in combination.

Nevertheless, of perfect competition, he evidently believes that it exists somewhere; for he often writes that in certain conditions it would be "maintained" or would "survive", quite distinct from other statements where he writes it could be "restored". What he apparently relies on, to support these statements, is limitation of size; and the factor that prevents firms from growing, at least in the short run, is the single non-augmentable entrepreneur. This is followed by a statement that must be quoted in full: "... in important parts of the economy the optimum size of the firm is still small compared to the size of the market. There is then no danger that perfect competition will be destroyed by the growth of firms or by combination of firms. There is still the danger that quasi-monopolistic institutions will be developed by trade associations, by political measures such as tariffs to prevent competition from abroad, and by licensing or other legal restrictions to hinder domestic competition. But if these are kept in check perfect competition can be maintained in such industries. If the rule is kept in operation in the other parts of the economy where perfect competition is not stable or possible, the optimum use of resources can be obtained without any interference with private enterprise in these particular industries" (p. 211).

Now, product differentiation, in the first place, is here ignored. On the preceding page the author had, once, used the words "some-

thing approaching perfect competition", but both before and after, it is "perfect competition" again. Where, in reality, the conditions here described do apply is not stated. The "if" of this paragraph, "if these are kept in check", is here left obscure so that one does not know which of several measures he thinks could here be applied "without any interference with private enterprise". The cost-conditions upon which this argument is based are those of steeply rising marginal costs and these are due to the fixed factor of the non-augmentable entrepreneur. Empirical cost studies that show marginal costs to be, not steeply rising, but fairly constant over a wide range of output, are ignored. After all this, the paragraph leads to the conclusion that "the optimum use of resources can be obtained without any interference with private enterprise in these particular industries". Such is the basis upon which Mr. Lerner rests his case.

All this, to my mind, can be explained in only one way. The equality between marginal cost and price, the author believes to be all-important. Private enterprise, on the other hand, is needed for the maintenance of political freedom, and the less interference there is, the safer democracy will be. These two things, he feels, one can see this in many places, are not easily combined. But he is not prepared to give up either. He is resolutely determined to have both. And, in the end, he does find them together. "There are many branches," he quite simply asserts, where private enterprise and perfect competition co-exist.

A simple assertion of this kind, of course, will not do. The whole attempt, furthermore, shows a lack of a sense of proportion. Mr. Lerner believes, it will be remembered, that state control of economic affairs endangers political freedom. This view, of course, can, in this simple form, hardly be true. If, with regard to Germany for example, Mr. Lerner had asked himself why Brüning failed and the Nazis came to power, he might have found that the opposite may be the case. It was not economic planning that killed German democracy, but failure to plan; a vigorous economic policy in, say, 1930 might have saved us much. It was not economic planning that killed political freedom, nor was it planning that prevented its return. For after he had arrived, Hitler consolidated his power by a few rapid political blows long before any economic measures had been put into effect. And it was Himmler and his S.S. that kept him secure. All this, however, is not my present point. If Mr. Lerner believed that, under state control, democracy would be in danger, whilst under private enterprise, democracy would be safe, he should, one feels, have put this objective first. Political freedom, after all, is very important. The equality between price and marginal cost, on the other hand, even if it mattered much, would surely matter less.

Mr. Lerner, of course, believes this too: "The controlled economy may consider that even some sacrifice of efficiency in the allocation

of resources is worth while as a contribution to the safeguard of democracy" (p. 85, discussing a one-scarce-factor controlled economy). Well, if this is so, why this relentless pursuit ?

We must now, however, get on to more important matters.

II

The pure theory of value, as everyone knows, is a highly abstract thing. Many consider it simply as an exercise in the logic of choice. It is often considered as a mere tool of thought. Many, perhaps, never ask how much it contains of reality. Some, it is true, take it as a first approximation. Mr. Lerner takes pure theory as reality itself.

It is difficult, it must be stressed, to know when, in this book, reality is discussed. There is the discussion, first of all, of the completely collectivist economy ; this, clearly, is not our world. There are, furthermore, many simple illustrations ; these, of course, are also not our world. Nevertheless, with some care, what is meant to be actual and real can be found. And what thus emerges is the theory of value.

Take, for example, the following statement : " Perfect competition has advantages over the attainment of the optimum by the Rule : the incentive to the managers is of the ideal intensity . . . because the entrepreneur will apply his efforts up to the point where a dollar's worth of effort can be expected to bring a dollar's worth of results. He will not stop short of this ideal point, as he would if the incentive were too weak, or wastefully go beyond this point, as would happen if too strong an incentive were applied " (pp. 83-4). Under state enterprise " the incentive to apply it [the rule] accurately is not so clear or so great Some incentives in the form of rewards (and punishments too perhaps) will have to be developed for the manager who is subjected to the Rule, and there will be a delicate problem of making them neither too weak nor too strong. In private enterprise under conditions of perfect competition, all these problems are solved " (p. 84). Look at this, quite apart from everything else, as a statement on incentives. The only thing, in the first place, for which the author allows is personal reward ; no one, apparently, whether private manager or public servant, ever does anything for any other reason. The adjustment, moreover, is perfectly mechanical ; there has to be a delicate balance between what is too strong and too weak. Such are Mr. Lerner's observations on human behaviour.

We are all familiar, of course, with statements of this kind ; but where we usually find them is in theoretical discussions that stand far apart from practical affairs. And the question whether they are meant to apply to reality is usually left open or not raised at all. But here, in this discussion, we are left in no doubt ; what the author thinks he is describing is the actual world. The above statement on incentives, for example, is to him one of the decisive points ; it

is one of the reasons why private enterprise, if there is perfect competition, is to be preferred to nationalisation.

Or take the following statement on consumers' behaviour: "If there is a free market in consumption goods and consequently no discrimination between different consumers, the price will measure the marginal substitutability for each consumer" (p. 78). This, too, is a statement about the actual world.

Statements like these, unfortunately, will not even cause surprise; we usually accept them as well-established propositions. They are the core of our text-books and lectures and classes. This, after all, is the stuff of which economic theory is made. And economic theory is an impressive structure; it is mathematical, orderly, complete and precise. Economics, we often feel, is the queen of the social sciences. Our propositions, unlike those of others, are not fumbling and vague; unlike others, we have discovered laws. Are these propositions and laws true in the actual world? This is usually, apparently, an unimportant point.

Mr. Lerner, however, leaves no doubt; he evidently believes these propositions to be true in the actual world. And this may well turn out to be the great value of this book. For to find these propositions accepted as representing the real world produces an unusually startling effect. And it is a wholesome reminder, and one that is overdue, of what sort of statements we are content to use.

Mr. Lerner thinks these propositions represent the whole of the truth. Others would probably say that this is not so. Propositions like these, it is usually believed, are only part of the truth; there are in reality, it is usually argued, many disturbing factors. This qualification, however, does not make these propositions any more true than they were before; for what is wrong with statements like these is that they contain no truth at all.

Their defect, however, is not that they are general and abstract; abstract and general is not the same as incorrect. The opposite of this statement, in fact, is true: these propositions are incorrect because they are not abstractions at all.

The problem of abstraction has given rise to a good many misunderstandings, and we must turn aside for a moment to examine it again. Abstraction, it is well to stress, is the characteristic of every science; all sciences are concerned with abstraction and generalisation. Laments, in economics, about abstraction as such are therefore not to the point. There are, however, two different kinds of "abstractness", and only one of them does what the word abstraction implies. Only one of them does in fact abstract certain elements from reality; the other, however, does nothing of the kind. It is a pity that for these two kinds we use one and the same term, for the two are entirely different things.

Take, for example, Keynes's *General Theory* and compare it with *Value and Capital* by Professor Hicks. In level of abstractness both

books are alike ; both alike deal with abstractions and generalisations. On this simple view, there is no difference between the two. But there is, nevertheless, an important distinction. What we find, in Keynes, are abstractions from experience ; what we find in Hicks are not. The assumptions of the former are derived from observation of reality ; the assumptions of the latter are got in a different way. The former, accordingly, contains some abstract generalisations that are yet applicable to the real world ; for the generalisations of the latter this is not the case. ✓

Look, to confirm this, at *Value and Capital*. "We need," writes Professor Hicks, "the principle of diminishing marginal rate of substitution. . . . Unless, at the point of equilibrium, the marginal rate of substitution is diminishing, equilibrium will not be stable" (p. 21). So far, of course, there is no reference to experience. Listen, however, to the argument of the following page. "Since we know from experience that some points of possible equilibrium do exist on the indifference map of nearly everyone (that is to say, they do decide to buy such-and-such quantities of commodities, and do not stay hesitating indefinitely like Buridan's ass), it follows that the principle of diminishing marginal rate of substitution must sometimes be true" (p. 22). He admits that this could not be established by introspection, but he nevertheless believes that it can be justified in this way ; he is appealing, he believes, to experience and finds his assumption confirmed.

Mr. Lerner's argument, to quote another example, is simpler, and no appeal to experience comes in at all. "Certain assumptions have to be made about human satisfactions. . . ., including the principle of diminishing marginal substitutability between goods" (p. 8). "We must assume that in general consumers try to obtain that which gives them more satisfaction rather than that which affords them less satisfaction. . . ." (p. 9). And after this his consumers proceed to their familiar equilibrium positions. Why we "must" make these assumptions, the author does not say, but his reasons are presumably similar to those of Professor Hicks.

Now it will be clear from these quotations that these are not empirical statements. With Mr. Lerner they are not empirical even in form. With Professor Hicks they appear to be empirical, but on closer inspection this turns out to be incorrect. What his argument amounts to is simply this. Many housewives, for example, step into a shop ; but they do not indefinitely stay undecided inside ; and when they leave, their baskets are filled with a precise collection of goods. This is proof, to Professor Hicks, that they have equated marginal utilities and prices, or rather that they have moved to a point where the price-line and an indifference curve are tangential. He does not say explicitly that this is what they do ; what he says is that this is the simplest assumption possible. Mr. Lerner, on the other hand, is less cautious than this ; at first he simply states that we "must"

assume this, but later, as was shown above, he believes that this actually happens.

These and similar propositions, of course, we often use. They are not, as is clear, empirical propositions. They are not, as is sometimes argued, first approximations to reality; it is not true that they take from reality what is essential and leave disturbing factors out. It is not true that they represent reality "expurgated" and "sterilised"; even Veblen's criticisms do not go far enough. What is contained in these propositions is not even a part of reality. The truth is quite simply that human beings do not behave like that.

The defect of these propositions, therefore, is not that they are abstractions; some very valuable parts of economic theory consist of abstractions too. It is not that some parts of reality have been left out, for this must inevitably be done in theoretical analysis. This, in fact, is the difference between the theoretical and the applied. But there is, nevertheless, an important distinction: between theory that does apply to reality and theory that does not.

Mr. Lerner's theory evidently does not. Professor Hicks's theory also does not apply. Our theory of value is not true to fact. It is not that our views contain only part of the truth. Our views about human behaviour, here as elsewhere, are not simplifications; they are incorrect. They do not represent anything that happens in the real world.

In macro-economic generalisations, the harm done by this is small. And it was here, after all, that the abstract method and deduction were first applied. The advantages, moreover, of the abstract method and deduction are here immense; it is clear, in the work of Ricardo for example, what powerful instruments they can be. Keynes's *General Theory*, too, contains for the most part macro-economic generalisations; no one would deny that, in essentials, they are both important and true. Mr. Lerner's statements on the principles of "Functional Finance" (Ch. 24) for example, are as "abstract" as the rest of the book; but here, he is concerned with macro-economic issues, and the chapter, accordingly, is, though abstract, correct. (This chapter, incidentally, is an admirable piece of work, and it shows what Mr. Lerner can do when his tools are adequate for the job.)

When we turn, on the other hand, to individual behaviour, all this ceases to hold. It is useless, in the first place, to say that we *must* make certain assumptions. And this is true of consumers' behaviour, of the behaviour of entrepreneurs, or that of trade unions, or of anyone else. An empirical science can find its material in only one way: by looking at the real world. And this is no less true of technical conditions; they cannot be inferred from mathematical propositions. It is useless, furthermore, to say that everyone must maximise something, whether it be satisfactions, or the wage-bill,¹

¹ See, for a recent example, J. T. Dunlop, *Wage Determination under Trade Unions*, p. 4: "An economic theory of a trade union requires that the organisation be assumed to maximise (or minimise) something."

or anything else. This degree of precision is not found in the world. Men and women, in cafés and shops, do not behave like calculating-machines. Even if they would, they could not do this, for psychical magnitudes are not precise. These are not problems that can be solved by differential equations. In business, on the other hand, conditions are neither fixed nor certain; and even where the desire for profit is decisive, our usual degree of precision is out of place.

In economic theory, these are serious defects. We shall here make no progress until we get rid of *a priori* construction. In the other branch of economics, however, things are even more seriously wrong than this, and we must now return to welfare economics.

III

Economic theory, it is sometimes argued, is concerned with the explanation of what is; welfare economics, on the other hand, it is said, examines what ought to be done. This view, however, is not universally held; it is not, for example, the view of Professor Pigou. Professor Pigou in his *Economics of Welfare* does not prescribe; he examines what would increase economic welfare and leaves it at that. This is important. As *The Economics of Welfare* is concerned with the *causes* of welfare, it follows that it is a *positive* study. Though the causes which Professor Pigou examines may not all be correct and though they may not be those that are most important in the real world, in approach and in method, at any rate, his book is objective. It is a positive study of causes, not a normative study of what ought to be done.

The study of the causes of welfare, of course, and prescription are not far apart; the former, to most people, is only a preparation for the latter. Nevertheless, they are two different things. -

In recent contributions to welfare economics,¹ this has been obscured. It was overlooked, in the first place, that all prescription is normative; prescription says what ought to be, it does not say what is. And prescription would yet be normative even if it were universally agreed. Mr. Kaldor and Professor Hicks apparently believe the opposite to be true; if some people welcomed a certain measure and no one was opposed, prescription, they believe, would then be objective. This, however, is a sense in which the word objective is not used elsewhere.

But, though this meaning of objectivity is inappropriate, another one is not. The sense in which *The Economics of Welfare* is objective, in fact, is the central point. This book, to repeat, is not concerned with prescription; it asks what is welfare and what would happen to it if certain things were done. Any study that does this and no more is an objective study.

¹ See N. Kaldor: "Welfare Propositions in Economics," *Economic Journal*, September, 1939, and J. R. Hicks: "The Foundations of Welfare Economics", *Economic Journal*, December, 1939; and further references given in these two.

It is a study, it is true, of sensations and feelings. And these are often referred to as "subjective". But a study of subjective feelings is not the same thing as a subjective study. We study valuations, as we all know, in economic theory too; and yet we are all agreed that it is nevertheless an objective study. What is true of valuations there, is true of feelings here. Both economic theory and welfare economics are positive studies. But though, if welfare economists would be content to study causes and not to prescribe, there would not be a distinction between "science" and "art", there would nevertheless be an important difference.

Economic theory would be concerned, in the main, with external matters like prices, incomes, employment and output. Welfare economics, on the other hand, would be concerned with internal sensations and feelings. The terms "price economics" and "welfare economics" have sometimes been suggested, and this may well be an appropriate choice. This division would not, however, imply a rigid keeping apart of external magnitudes, like prices, and subjective feelings. We need valuations, for example, for the explanation of prices. And we need the conclusions of "price economics" to examine the causes of welfare. There would, however, be a difference in objective. In "price economics", it is prices and similar things that matter; valuations are brought in only where they are needed for explanation. In "welfare economics", on the other hand, feelings are, not instrumental, but the object of our study; everything else is considered only in so far as they influence these.

If all this is granted, one difficulty remains. Though the causes of welfare may be a positive study, what happens if we turn from the individual to all? Is it possible to make any statement about social welfare? Can we compare, in other words, the satisfaction between one individual and another? This is the question, it will be remembered, that has been the centre of the discussion on whether objectivity is possible or not. If we are looking for an accurate measure, the answer, of course, is no; we have no direct measure for internal states of feeling. We may guess, of course, and surmise, and clear evidence is usually there; and most of us are quite prepared to act on the strength of this evidence in practical affairs. But there is no need, even though this is so, to call an hypothesis a fact. ✓

Mr. Kaldor some time ago suggested¹ that we might overcome this difficulty by the payment of compensation; and his suggestion has since been taken up, among others, by Professor Hicks. If a given measure of economic policy leads to a change in the distribution of income, nothing, it had been maintained before, could be said about welfare as a whole. For whilst some people gain, others may lose, and we have no way of saying that the gain exceeds the loss. This difficulty, it was suggested, could be overcome by the device of compensation. If all that lose are, or can be, compensated so that they

¹ *loc. cit.*

are no worse off than before, whilst others, though they may have to pay this compensation, are yet better off than before, then, it was argued, social welfare has increased. We can then say that total satisfaction has increased without comparing the satisfaction of one individual with that of another.

This device, however, will not do. For the relation between incomes, also, is a component of welfare, and the payment of compensation may be considered unfair. Or, if the rich become richer, though everyone else's income remains the same, the increase in inequality may yet be resented and total welfare may thus be less than before. To measure the satisfaction derived from all incomes together, this cannot be done; some incomes rise, some fall, that is all we can say.

That is all we can say, and that is all that need be said. To attempt to say more would be saying less. There is no need to get a single measure for "general welfare" or "total satisfaction". It is not this that counts in practical affairs. And so long as we use this as a single measure, however we may get it, the essence of the matter would drop out; the problem of conflict would be assumed away.¹

Even if we assume that the division of income is all that matters between one individual and another, even then it is clear that conflict is the essence of the problem. In reality, however, it is a matter far wider than this. There are many other conflicts as well. Between individuals and groups and classes and nations. There are also, for society as a whole, conflicts between objectives. Efficiency and security, progress, stability, fairness, freedom from control—to achieve each by itself is an easy matter; if we try to achieve more, we find that each clashes with all.

What, then, would it mean, to say that "aggregate welfare" has increased? What meaning would there be if all these things were lumped together into one single measure of "social welfare"? To search for a single answer, here, is beside the point; as conflict is the essence of the problem, we must not assume it away.

In current writings of welfare economists, it is true, the matter is simpler than this. However, they are hardly concerned with the problem of welfare. They believe they are discussing welfare, in fact they are not. They claim to be objective, but this claim is untrue.

They cannot, in the first place, resist the temptation to prescribe. Though what they consider may be irrelevant, unimportant, impracticable, or untrue, they nevertheless insist on telling us what ought to be done. What ought to be done, everyone can say. And whilst we want, of course, to say this too, this is not our primary task. Our primary task is to show what it is that can be done; and what particular measures would lead to an increase in welfare. If we want to be objective, we must not prescribe. If we want to be objective, more-

¹ See Gunnar Myrdal: *Das Politische Element in der National-Ökonomischen Doktrinbildung*, Ch. VIII. I owe much of this article to this book. Myrdal's suggestions on how to achieve objectivity in welfare economics are not, it should be noted, the same as the concept of "Wertfreiheit" in Max Weber.

over, we must consider everything that matters ; we must consider the things that matter to the people concerned. And we must consider these matters whether we like them or not ; our own views of what is important are mere prejudice and opinion. To say that everyone will be happier, is neither possible nor required ; if we can show that some will gain and some lose, that will be enough. What ought to be done will easily follow from this, but we should not expect science to tell us all. Science can show us who would gain and who would lose ; no one can escape the obligation then to choose for himself.

To achieve objectivity, in this real sense, is, of course, as we all know, no easy matter ; and no one ever entirely succeeds. But unless we try, and succeed at least in part, welfare economics will remain a sham.

The task of welfare economics is to study the causes of welfare ; what would make men happier, and what would not. What people's needs are and how far they can be fulfilled ; which needs remain unsatisfied and how far this can be reduced. Before we can study the causes of welfare, however, we must first know what welfare is. Welfare, or happiness, however, is no simple thing. What our welfare economists consider is only one part ; and what they see in this, moreover, is quite simply not there. All the things that matter, on the other hand, are left out.

We want to show, welfare economists usually begin, how we can best satisfy people's wants. The one want which most of them then consider is the demand for consumption. Even the division of income, where it is considered, is treated as no more than a sub-problem of this ; and so, quite often, is the problem of employment. This one want, for consumption, is then considered with infinite care. But not, as one might expect, to show how we could produce more with our current resources. No, welfare economists are concerned with the problem of allocation.

This, it appears, is of immense importance. Consumers, in the first place, choose with the utmost of wisdom and care ; in restaurants and shops and pubs and stores, they equate marginal utilities with the maximum of precision. Our duty, then, is to see that all this is not done in vain. In the first place, we must make sure that this optimum is not disturbed. We must ensure, then, that what they allocate are not simply goods but resources. All the weapons of economics are then brought to bear on this problem ; the calculus, geometry, in two and three dimensions. In Mr. Lerner's book the problem is examined for simple cases first. Two goods that have already been produced. Two goods and one scarce factor. Two goods and two scarce factors. First in fixed and then in variable proportions. Diminishing marginal transformability and the elasticity of substitution. Indivisibilities. Fixed factors. Short periods and long. In the end there emerges the triumphant conclusion : prices and marginal costs have been made equal throughout. Unemployment has been reduced. Total satisfactions have been maximised.

Lock-outs and strikes? Industrial relations? The control of wages and the control of prices? The vicious spiral? The problem of incentives? The motive of profit and the motive of service? The training of workers and the choice of a job? The problem of discipline? The guaranteed week? The location of industry and the planning of towns? Private ownership or nationalisation? The problem of justice in distribution? Government regulation or freedom from control?

Equate prices and marginal costs everywhere, writes Mr. Lerner. If you can do this under private enterprise, keep it; if you cannot, nationalise. Counterbalance cyclical fluctuations. This is Mr. Lerner's advice. "We must leave to the politicians the political problems of compromise."

IV

The idea of "economic welfare" as a part of "general welfare", is a misleading conception; welfare is one harmonious whole¹. It is both possible and convenient, on the other hand, to study the economic causes of welfare by themselves. But to study the economic causes of welfare, we must first find out what all the causes of welfare are. Only thus shall we be able to know whether what we usually consider is enough. To take only consumption and consider that alone, cannot yield conclusions of any value. Warnings against this, after all, abound. "But his conclusions . . . do not authorise him [the economist] in adding a single syllable of advice. That privilege belongs to the writer or the statesman who has considered all the causes which may promote or impede the general welfare of those whom he addresses, not to the theorist who has considered only one, though among the most important, of those causes."² "Pleasurable sensations of consumption are not," Veblen urged, "the sole end of economic endeavour."

The economic problem, it may be, is the problem of choice; but the choice between food and clothes and entertainment and travel is of only minor importance. In the welfare of everyone, the satisfactions of consumption form only a part. Welfare is a thing made of more elements than this. If we wish to know what they are we can only look and see; one glance at reality will show us how much we leave out. But if we want to do this well, we should not rely on personal observation, but turn to science. The study of sensations and feelings, after all, is another science's task; if we turn first to psychology we shall be better equipped for the job.

In many countries, the central economic problem is no longer poverty but conflict. Everyone wants more, no one wants less. Many want

¹ See Graham Wallas, *The Great Society*, p. 351; J. A. Hobson, *Free Thought in the Social Sciences*, pp. 170—1; L. T. Hobhouse, *The Elements of Social Justice*, p. 27.

² Nassau Senior, *An Outline of the Science of Political Economy*, 1836, 1938 reprint, p. 3.

more leisure, more income and less work. Some want no interference, others want control. Some want control of others, but not of themselves. Some want to keep private enterprise, others want nationalisation. Some want to see justice, but what justice is is not agreed. Some want stability, others want change. It is a problem of conflict, for all wants of all cannot be satisfied. What we need, both for each individual and for society as a whole, is some sort of balance between many conflicting desires. Once this is seen, the search for the maximum, whatever Bentham may have thought, will be at an end. We would be content to see all happy; and if not happy, at least happier than now. The difficulty is not only that the means to do this conflict, but conflict itself is its greatest foe. And this, perhaps, is the welfare economist's chief task: to show how conflict arises and how it can be reduced.

Book Reviews

The Open Society and Its Enemies. By K. R. POPPER. Routledge. 1945. 2 vols. vi + 268, 352 pp. £2 2s. od.

After reading and pondering this remarkable, stimulating and, at times, irritating book, one is tempted (the human permanent vice of system-making and maxim-mongering surviving even the reading of Dr. Popper) to reduce the lesson to two apparently banal pieces of advice. "Never prophesy unless you know" (remembering that you *can't* know) and "keep your eye on the ball". According to Dr. Popper, one of the greatest, perhaps the greatest, obstacle to social progress is the succumbing to the temptations of prophecy that assail the greatest minds, especially the greatest minds, and the weakness of the more ordinary human mind that finds comfort in being told—and in believing—that the future is known, predictable, working out according to plan. Great thinkers, great system-makers have in the past prophesied much and badly. Plato did; so did Aristotle (though Dr. Popper would, I fear, regard the greatness of Aristotle as a superstition). They and their disciples have failed to see what is under their noses, they have been less adequate as guides than less able men who have practised a more empirical and short-term political and social art. So it has been from Plato to Hegel and Marx. Dr. Popper is rather kinder to Marx than to Hegel, rather kinder than his rigorous method, I think, permits. For it is, in fact, with Marx and Marxism that we are confronted. That is the great final system that fascinates the world to-day, that blinds so many highly intelligent men to current short-term realities. They comfort themselves with the long-term rightness of the theses, forgetting the deep wisdom of Lord Keynes's dictum: "in the long run we shall all be dead". Marx and Engels, two of the worst short-term prophets known to history, died with their ardent apocalyptic vision still unsatisfied. It is a little hard to see why the great prophet was both right in the long run and so wrong in the short run or why his disciples, to-day, should be more competent users of the master's technique than he was. And I cannot help feeling that the application of standards, applied by Dr. Popper to Hegel, to the greatest of the pupils of Hegel, would have had a higher degree of utility than the disembowelling of Aristotle. But here there may be at work a difference in the national tradition. Lord Russell pointed out, some ten or fifteen years ago, how difficult it was for anyone brought up in the English empirical tradition to remain truly symmetrical, truly systematic. "Cheerfulness keeps breaking in" as with Dr. Johnson's would-be philosophical friend. Marxism, Hegelianism, Scholasticism; these great architectonic masterpieces seem never to be really at

home with us. Even the most zealous Marxian who lives here is affected by the "climate of opinion" (that revealing and very English phrase). There is lacking here the great German gift for believing the nonsensical because it is a legitimate result of a system. There is a less agreeable side to all that, a lack of acuteness, a really Philistine banality that is deeply irritating and has often serious practical consequences. It has, for example, the consequence that it is very hard for people brought up in this tradition to believe that doctrine really matters, that men of great energy, power, intelligence can view the world from the standpoint of a closed system. There is always present in the English mind the belief that most differences are verbal and that there is a common ground to be found by linguistic evasion or by mere day-to-day deals. The world would be a happier and safer place if this were true. As it is, Dr. Popper will find it hard to get the average English reader to take as seriously as he does the great intellectual error (*fons et origo mali*) that persuades men that they have a kind of knowledge that they do not have and cannot have. The English reader will be too complacent but he will not, in my opinion, be totally wrong. For it is possible to exaggerate the importance of professors, even of such professors as Plato and Hegel, to write, as Dr. Popper occasionally does write, as if a sounder methodology taught by Plato or Hegel, or the golden silence of Plato or Hegel, would have altered the character of Greek or Prussian politics. That I fear, or hope, is untrue. Plato and Hegel and Marx were all forces in their own right not only because they were men of genuine power and occasional blinding intuition, but because the societies that they sprang from were pondering questions to which (in Dr. Popper's opinion and in mine) there was no one answer. But men want one answer.

And it is to be noted that in very troubled times absolute doctrines have an especial appeal. The average man, hag-ridden, terrified, swept away from his traditional moorings, is tempted to fall back on a passive "I can't take it", or to take up, eagerly, *some* doctrine, especially some eschatological doctrine. The Nazis profited by this; so do the Communists. There will always be this demand; there will always be a supply. The most that can be done is to fight, as Dr. Popper has done, against the seduction of the young and generous, against the false prestige which the name of "science" gives to a permanent and dangerous craving of the human mind. The practical limitations imposed on action by a succumbing to this craving are obvious. The eye is not kept on the ball; deeply dangerous short-term miscalculations are made and result in the continuing of a course of action that becomes more and more disastrous *because* (it is believed) what must be wrong is that the dose is insufficient. In reading the repeated and ingenious exemplifications of this truth in Dr. Popper's book, I was haunted by an historical example that I finally ran down. It is one of the commonplaces of history that the great Prussian military triumphs of the Bismarckian era were

the result of the application of a doctrine of war. As a result of the application of that doctrine, Prussian generals and soldiers, of whom hardly any had ever seen a shot fired in action, defeated veteran Austrian and French generals and soldiers. The academic pupils of the "Prussian schoolmaster", Clausewitz, defeated the practical heirs of Rodetzky and Bugeaud. But the real truth is more impressive, for it was a doctrine of a non-closed military type that won. And when Marshal Foch was teaching before the war of 1914 at the *École de Guerre* and laying down the laws of victory with a clarity, precision, and rigidity that befitted a very brilliant son of the *École Polytechnique*, he used to temper his doctrine by a parable. In 1866, one of the most brilliant but practically inexperienced commanders of the Prussian army, Von Verdy du Vernois, found himself at Nachod in Bohemia in an awkward situation. He pondered all the lessons he had been taught, the principles of war and the rest and then, with an effort of will and mind, threw them all away. "Never mind the principles, what is the problem?". And the system-maker, Foch, wanted his pupils to choose, in a crisis, the method of Von Verdy rather than fall back on a rigid and prophetic system of war.

As I have suggested, Dr. Popper is a rigorous controversialist and one may even come away from reading him with a little sympathy for Plato and Aristotle and even for Fichte and Hegel who were less dishonest and time-serving than is suggested here. Some historical points are driven home too hard. At no time in modern history has Prussia been predominantly Slav. The greater part of the Hohenzollern lands were integral parts of the "Holy Roman Empire of the German Nation". The only part of the old Hohenzollern lands which was not part of the Empire was East Prussia which was overwhelmingly Germanic and, where it was not, was far more "Old Prussian" (i.e., Lithuanian) than Polish, and (for what it matters) the Lithuanians are not Slavs. Nor is it quite just to sneer at the intellectual level of Prussia. Before the University of Berlin was founded, there was the Academy, the most distinguished imitation of the Paris academies. And the reasons for founding a University at Berlin were not purely militarist or *revanchard*; they had a good practical basis. Halle had just been lost by the Peace of Tilsit and Königsberg was remote. It is, I think, moving on to dangerously "closed" grounds to write that "rationalism flourished in the former Roman provinces, while men from the "barbarian" countries were prominent among the mystics". If Master Eckhart was born and worked outside the *limites*, Saint Teresa was born well within them, as was Blaise Pascal. But no more than Dr. Johnson does Dr. Popper waste time in stating his opponent's case with perfect objectivity. In an age when that case is imposed by so much weight of mere authority and mystagoguery, this is probably the true recipe for victory in the spirit of Von Verdy. "Treat 'em rough".

D. W. BROGAN.

Pengeteori og Pengepolitik. Jørgen Pedersen. Nyt Nordisk Forlag Arnold Busck. Copenhagen. 1944. 381 pp. Kr. 16.50.

One result of the controversies which followed the appearance of *The General Theory of Employment, Interest and Money* was to make British economists recognise the significance of the so-called "Stockholm School"; and the debate between the late Lord Keynes and Professor Ohlin certainly did much to clarify some of the essential points at issue. Sweden, however, is not the only Scandinavian country where important work has been done on this subject. In recent years Denmark has been getting more of the limelight. One of the things that struck me at a Conference of Scandinavian economists at Stockholm last September was the frequent reference made to "the Aarhus School". Professor Jørgen Pedersen, of the University of Aarhus, is primarily responsible for this new development, and in 1944 he published a major work on monetary theory and policy on which he had been engaged for seven years.

The interest of the opening pages of the book centres around the author's dissatisfaction with the confusion arising from the different meanings of the concept of "money". He thinks that too many authors in fact use the word to signify "income" while at the same time regarding it as standing for "means of payment". Among the economists whose attitude Professor Pedersen finds to his taste are Schumpeter (*Das Sozialprodukt und die Rechenpfennige*), Lindahl and the late Lord Keynes. What he does is to discard the old textbook definition of money as means of payment and substitute for it the notion of "income expressed in terms of a unit of account" (page 25).

Many readers will find it difficult to get excited about this battle of definitions. I agree with the comment made by Professor Philip, a pupil of Professor Pedersen's, that, as the language of economics is poor in words and rich in concepts, we may as well enjoy the luxury of synonyms. Moreover, I should have expected a book published in 1944 to deal with what Hicks has to say about the concept of income in his *Value and Capital*. It is not very comforting to be rescued from the uncertainties of what we mean by "money" only to be landed in the quicksands of "income" definitions. Surely Professor Pedersen exaggerates the confusion that needs to be cleared up. Most textbooks distinguish between money as a means of payment, a unit of account and a store of value; and there is fairly general agreement nowadays on the nature of the essential property of money which makes it the central feature of a dynamic economy.

On the determination of interest Professor Pedersen is thoroughly Keynesian and attacks the Stockholm School's criticisms of *The General Theory*. Professor Ohlin assigns a fundamental rôle to the quantity of "claims", and rejects the unique emphasis placed on the quantity of cash in the liquidity preference doctrine. Professor Pedersen argues that Ohlin's objection is superficial and that his theory in essence comes to the same thing as Keynes'. The argument

is similar to the one developed by Mr. Lerner in his article, "Alternative Formulations of the Rate of Interest" (*Economic Journal*, 1938).

It is a merit of this book that it seeks to extend the Keynesian apparatus to cover some of the complications of an open system, but it is clear that much remains to be done in this field. The analysis of the effects of inflation and deflation on distribution and production does not contain any original features. It is surprising to find Professor Pedersen using a concept of "inflation" which is not consistent with his main argument. The "first phase of an inflationary movement" is made to cover a state of affairs where unemployed men and resources are being re-absorbed into production, and the second phase is reached when there is a tendency for the wage level to rise (p. 221). It would surely be more accurate to restrict the term "inflationary" to the situation where an increase in effective demand fails to lead to an increase in output and sends money prices soaring. A further defect is the omission of the part played by the principle of acceleration.

An interesting discussion of the problem of the value of money leads to the conclusion that it involves keeping the price of a "representative labour unit" constant. The author will not have gold and he also rejects the idea of regulating the purchasing power of the currency in terms of a standard group of commodities.

The second half of this volume is devoted to the implications of various objectives of monetary policy. Special mention must be made of the valuable chapter on regulating the price level in inverse proportion to productivity. On this topic the author has several important things to say, especially on the international reactions. Diverging somewhat from the Davidson-Lindahl tradition of thought, he concludes that it is the wage level that should be kept stable and that the disturbances due to productivity changes either abroad or at home should be offset by appropriate adjustments in the foreign exchange rate and in commercial policy. It is argued that this would have the double advantage of setting limits to possible cumulative movements of prices and employment and of diminishing the risk element in business enterprise. Of course, Professor Pedersen is well aware of the practical difficulties of such a course in countries where trade unions are strong and accustomed to sectional bargaining. He suggests that the workers' and employers' organisations should continue to fix wage rates as at present but that these rates should be subject to approval by an official body responsible to the Government. There is also a hint that a high and stable level of employment could be more easily maintained if there were a State monopoly of foreign trade.

The author is convinced of the necessity for the State to counteract fluctuations in the level of income, and he puts forward an ingenious plan for coping with a downswing. Whenever the private sector fails to generate sufficient income, the State should pay a transitional

grant to the workers who lose their jobs. This grant would be equal to the full wage of an unskilled man and would be paid for a limited period with the proviso that the recipients must accept new employment anywhere in the country at trade union rates. Given this breathing space, the State could then apply various methods of maintaining the general level of employment (through taxation, credit, exchange rate, public works or tariff policies); and these measures would have a good chance of success because they would merely have to defeat the *primary* impact of the reduction in demand for labour, the secondary (and dangerous) effects having been obviated by the maintenance of consumption through the distribution of transitional grants. It is not clear how such a scheme would fit in with a system of unemployment insurance; but one must admit that there is a strong theoretical case for the idea.

Professor Pedersen has written a stimulating book which cannot fail to have a potent influence on discussions of policy in his country. I cannot help feeling, however, that he has done less than justice to the contributions of the Stockholm School and has paid insufficient attention to the reformulations of the Keynesian theory in the last ten years.

BRINLEY THOMAS.

The Industrialisation of Backward Areas. By K. MANDELBAUM. Institute of Statistics. Monograph No. 2. Basil Blackwell, Oxford. 1945. 111 pp. 10s. 6d. net.

The whole argument of this book rests on the assumption that a considerable proportion of the agricultural populations of densely populated backward countries "could be taken off the land without loss to agriculture" (p. 2) "even in the absence of changes in land tenure, in crops, or in farming methods" (p. 3). We are assured that "available calculations"—to which, however, no reference is given—"show that of a total active farm population in S.E. Europe of rather less than thirty millions between six and eight million active workers are superfluous". Granted this assumption, most of the rest follows. The surplus population, removed from the land, can be employed in other ways. "State initiated and financed expansion of demand" would make their employment possible. A good deal of the capital required for a development plan could be provided locally.

But is this basic assumption correct? It did not hold good for Trinidad, which is a good example of the kind of densely populated agricultural country which Mr. Mandelbaum has in mind. During the war, the attraction of work for the American bases led to a considerable fall in the active agricultural population of Trinidad. This was accompanied by a corresponding fall in agricultural output. In my judgment, the same result would follow in most backward areas, including S.E. Europe, if the removal of agricultural workers were not accompanied by changes in agricultural methods,

The low yields *per acre* in most backward countries¹ might have made Mr. Mandelbaum pause for reflection. Possibly he thinks this is explained by his assertion that "large numbers in these areas eke out a precarious existence on submarginal land". It would presumably surprise him to learn that, for example, "in China, where animal power for traction is lacking, the average area in tillage per head of the agricultural population is very small owing to the amount of labour required for cultivation with the hoe. Such cultivation is not possible unless the soil is relatively fertile."² In the West Indies, the amount of work which most peasants devote to their holdings is relatively small; tiny as most of these holdings are, they would yield considerably more if their owners spent more effort on them. The reasons for this strong preference for leisure are controversial, but the facts are well established, and I suspect they apply to some other backward countries also.

In these circumstances, I feel that to speak of "disguised unemployment" is inappropriate. Considerably fewer workers could produce the same output, yes—but only if they were first provided with more instruction or better diet or more capital or greater incentives. All this usually needs large expenditure. After all, the majority of workers in any country are suffering from "disguised unemployment" in the sense that they could produce more (in the same occupation or a different one) if assisted by more training and more capital.

Mr. Mandelbaum says, in effect, industrialise first and all the rest shall be added unto you. To my mind, it is the improvement of productivity in agriculture which is vital; it is this which should accompany, if not precede, other changes. Exactly how agricultural productivity can best be raised is a question for detailed study in each district, and not for airy generalisation. In some places it may involve changes in the rotation system or in the varieties planted; in many it may involve more capital, perhaps in the form of draught animals or more mechanisation or soil conservation or irrigation; in some a change-over to mixed farming or to more labour-intensive crops is needed; usually better agricultural instruction is desirable; often systems of land tenure need reform. But the relevant facts must be studied; the problem cannot be solved, as Mr. Mandelbaum attempts to solve it, by constructing "models" in a study.

His book, apart from some generalisations in the first nineteen pages, consists of "a hypothetical model of an industrialisation process in S.E. Europe". We are warned again and again that "the study" is "purely hypothetical"; no figure is to be taken as "a concrete estimate for an actual reconstruction plan for S.E. Europe; the purpose

¹ "While in north-western Europe wheat usually yields between 23 and 30 metric quintals per hectare, the yield in eastern Europe varies between 9 and 12 quintals; in China it is usually about 11 and in India just above 7 quintals". League of Nations: *Industrialisation and Foreign Trade*, p. 37.

² *Ibid.*, p. 37, footnote.

of our calculations is to illustrate the argument". Mr. Mandelbaum proceeds on these lines. We have a surplus agricultural population, plus natural increase, to dispose of. How shall we allocate them? Let us distribute them among industries according to the distribution prevailing in the relatively advanced countries of Austria and Czechoslovakia in 1930 and 1934. Then we want, for example, housing for 2,875 million (*sic*: the comma should be a decimal point) wage-earners. What will that cost? Does he discuss the type of house, and actual costs of construction? Not at all. "The pre-war cost of a working-class house in Great Britain, net of land, was in the neighbourhood of £350. Requirements and costs in our area are certainly much lower, and we may not be far out in estimating them at half the British figure, i.e., £175 per breadwinner (at pre-war prices)" (p. 27). Hence, "the total cost would amount to just over £500 million". As for "Amenities and Public Works", an estimate of their cost would need more detailed study than we have been able to undertake. We have tentatively assumed that the cost would be about two-thirds of the cost of "Buildings for Industry and Services" which seems a fairly generous estimate. It works out at ca. £220 million" (p. 28). One might imagine that the cost of Buildings for Industry and Services had been the subject of "detailed study"—in fact, it is taken as 20 per cent. of his estimate for the total capital required in Industry and Services, and this latter is obtained by adopting "the Australian standard as the main yardstick" (p. 32). ("Suitable figures" for capital per head are available for only "a few countries" and of these Australia has had the honour to be chosen.) If the incredible Mr. Mandelbaum were not so obviously serious we might take his book to be a wildly extravagant satire on planning and planners.

I take this opportunity to protest against the growing practice of misusing traditional economic terms. "Profits," to Mr. Mandelbaum, include interest, rent, royalties, salaries (except small ones) and all the incomes of persons working on their own account; thus, in this country, they would form nearly 60 per cent. of all personal incomes instead of about 10. "Industrialisation," to him, means not only manufacturing, not even manufacturing plus building plus mining, but all economic activities other than agriculture, including "transport, distribution, banking and insurance, administration, the essential professions, etc." (p. 22). "External economies" do not mean, to him, only those economies due to the growth of an industry but also all the economies due to expenditure and development elsewhere in the economy (p. 4).

When I contemplate the dozens of "carefully-computed" tables—computed upon assumptions similar to those I have cited—and recall that all the political and social and administrative problems associated with economic development have been deliberately omitted and that anyway the tables refer neither to S.E. Europe nor to any other place on land or sea, I feel that perhaps after all the phenomenon

of "disguised unemployment" does exist. But it is to be found much nearer home than S.E. Europe.

FREDERIC BENHAM.

Industrialisation and Foreign Trade. League of Nations. 1945. 167 pp. 7s. 6d.

This volume completes the series of studies on commerce and commercial policy which the Economic, Financial and Transit Department of the League of Nations has been issuing during the last few years, as part of its programme of post-war studies. The Department has won the respect and admiration of all who value careful economic analysis firmly based on facts. We regret its passing, and can only hope that its successors will be able to maintain its high standards.

The present volume is mainly the work of Mr. Folke Hilgerdt. He is to be congratulated. The large amount of detailed statistical work is well summarised, and sources cited, in the Annexes. The text itself is a readable and lucid account of his conclusions, with enough tables and graphs to illustrate the various points.

The three findings to which Mr. Loveday draws attention in the Preface are:

"First, that until about 1930 the growth of manufacturing, far from rendering countries independent of foreign manufactured goods, stimulated the import of such goods;

Secondly, that again up to about 1930, those countries in which manufacturing developed most rapidly as a rule increased their imports of manufactured goods more than did other countries; and

Thirdly, that after the breakdown of multilateral trade early in the 'thirties, this relationship between the growth of industry and of trade in manufactured goods was severed."

The book contains so many useful generalisations that perhaps my best course will be simply to select a few of them for quotation.

The percentage distribution of the world's manufacturing production (defined as "industry" less mining, building, and electric power generation) in 1936-38 was as follows:

U.S.A.	..	..	..	..	..	32.2
U.S.S.R.	..	..	..	..	..	18.5
Germany	..	..	..	..	..	10.7
U.K.	..	..	..	..	..	9.2
France	..	..	..	..	..	4.5
Italy	..	..	..	..	..	2.7
Canada	..	..	..	..	..	2.0
Belgium	..	..	..	..	..	1.3
Italy	..	..	..	..	..	1.3
Japan	..	..	..	..	..	3.5
India	..	..	..	..	..	1.4
Other Countries	..	..	..	..	..	12.7

The outstanding changes between 1926-29 and 1936-38 were the increase in the share of the U.S.S.R. from 4.3 to 18.5% and the fall in the share of the U.S.A. from 42.2 to 32.2%.

"Africa, Asia (excluding U.S.S.R.), Latin America, Oceania and Southeastern Europe may be regarded as 'economically young' areas; in 1926-29 these areas represented 69% of the world's population but only 10% of its manufacturing industry."

The author clearly believes that manufacturing should and will develop in these areas, but he is aware of the many difficulties. "Their industrialisation would require, among other things, a radical change in social values and administration, reorganisation and rationalisation of agriculture". "The influx of foreign capital is of great importance for the development of external trade and of public utilities which are prerequisites for industrialisation" but "domestic savings must usually supply the bulk of the industrial capital". "A successful industrialisation scheme must usually include a broad programme of social rejuvenation, of hygienic improvement, of general and technical education, of agricultural reform and of investment in transportation, power generation, and other utilities" (p. 121). Most important of all, in my view, is the warning that "in densely populated countries a successful programme of industrialisation might have to be combined with measures intended to check excessive population growth".

Between 1876-80 and 1936-38 "the world's population rose by little over one-half, world manufacturing was multiplied seven times, trade in primary products almost four times, and in manufactured articles $2\frac{1}{2}$ to 3 times". But "while between 1926-29 and 1936-38 world manufacturing increased by over a third, world trade in primary products rose in quantum by only $3\frac{1}{2}$ % and world trade in manufactured products declined by 13%" (p. 14). "The problem of industrialisation of less developed areas requires to be considered, therefore," (concludes Mr. Loveday in the Preface) "in relationship with the general question of reviving and thereafter maintaining an effective working system of multilateral trade".

One more point may be added. "A study was made of the competition between older and younger industrial countries in their exports to primary producing countries. The evidence did not suggest that the older industrial countries lose from such competition". This applied to the United Kingdom, which gained on balance from the rise of Japan and other competitors (whose purchases increased the purchasing power of primary producing regions for British products).

But this was true only "under conditions of sound international trade". "After the collapse of the multilateral trading system in the 1930's, the United Kingdom lost to younger competitors a considerable part of the export market in primary producing regions which it had developed during previous decades" (p. 120).

FREDERIC BENHAM,

Précis des Mécanismes Économiques Élémentaires. By CHARLES RIST. Librairie du Recueil Sirey, Paris. 1945. 378 pp.

This book, written during the occupation of France, is intended primarily for study in the senior forms of secondary schools. It is designed, we are told, "less as a treatise on political economy than as a précis of economic sociology". Professor Rist, indeed, observes the social activities of the modern world with something of the acuteness and detachment of a Maeterlinck studying the life of the bee. From the fullness of his experience and reflection he has produced an interesting contribution towards the ideal textbook on descriptive economics. That this textbook has yet to be written is due primarily to the extraordinary difficulties of the enterprise—difficulties to which the present book bears witness.

Professor Rist starts with a brief description of the transformation effected during the last century in the economic life of France—industrialisation; the growth of "big business"; the occupational re-alignment of the population; and so on. A summary account of the income-expenditure circulation follows (but does not hint at the significance we now attach to variations in the *size* of the circulation). Then come some practical details of the organisation of the principal markets, including the capital market. All this, however, occupies rather less than one-third of the book, almost all the remainder being concerned with money, studied successively as domestic currency, as credit, and as an international medium.

Here we go into greater detail, examining, for instance, the importance of the notes of the Bank of France as the basis of the monetary structure of metropolitan and overseas France; the significance of the rate of interest as the controller of credit (put higher than current Anglo-Saxon thought would do); the historical development of the gold standard; the monetary mechanism equating exports and imports; and many other topics. The fascination of monetary problems seems, indeed, a little to have run away with the author's sense of proportion in the allocation of his space. For—though these later chapters contain much lucid description, and will reveal to the average French schoolboy much about the complexity of the monetary system which it will certainly be profitable to him to know—the structure of the book seems a little distorted by the greater interest shown in these subjects than in the broader questions treated in the earlier part of the book. (Although, this reviewer hastens to add, this is a preference which he most heartily shares with the author.)

"Je ne propose rien, je ne suppose rien, j'expose," says Professor Rist on his title-page. Such sublime impartiality is, naturally and indeed desirably, unattainable in practice. We learn, for example, that the author believes in control by Bank Rate (p. 168); regards gold as still useful to back a currency (pp. 126, 178, 184); dislikes paper money (pp. 235-6); and aspires still to a single international

monetary standard (p. 367). Is it hypercritical to feel that these views are a little old-fashioned to set before school-boys to-day? In a few other ways, also, the argument, even though designedly elementary, seems a little *vieux jeu*—for instance, in its citation of the discount of a bill of exchange as a typical banking transaction (p. 155) and its avoidance of any allusion to Keynesian doctrines, unless these are to be deduced from the author's condemnation of deflation as a method of correcting exchange maladjustments.

For all this carping, Professor Rist has produced a book of real value. There are far too few studies in descriptive economics for any new one to be hastily rejected, far less one written with the grace and lucidity of which Professor Rist is master. Let us hope that the end of the period of enforced leisure, to which he makes dignified allusion in his preface, will not preclude his adding a further volume in the same field, extending his survey over more of the social life of the human hive.

J. K. HORSEFIELD.

Bank for International Settlements. Fifteenth Annual Report. Basle. 1945. 162 pp.

The fourteenth Annual Report of the B.I.S., for 1943-44, issued in the Spring of 1945, included economic and statistical data for the calendar years 1943 and 1944. The present Report, dated "Autumn 1945", brings these details down to varying dates in 1945—in one instance as late as November 29th. It therefore covers the initial post-war period, and records the immediate impacts of peace upon the world economy.

To say that the Report is as comprehensive and authoritative as its predecessors is to pay it high praise. The inevitable curtailment of the comparable League of Nations publications, and especially the disappearance since 1939 of the *Monetary Review*, has given the B.I.S. Reports a unique place in the reference library of monetary students. The present issue again fills a real need—lacking only the final effectiveness which would have been conferred by the provision of an index to its innumerable facts.

The scope of the survey is, indeed, extremely wide. Starting with a brief synopsis of the legacies of the war in individual countries, it considers first some general problems arising from the transition to peace—reparations, coal supplies, U.N.R.R.A. and so on. Turning then to more directly monetary issues, it studies the arrangements made for the exchange of notes in seven liberated countries; the effects of war on the public finances of the chief belligerents; foreign exchange rates; payments agreements (a masterly summary of their principal characteristics); Bretton Woods; international trade; and gold supplies. In between are sandwiched useful surveys of other economic factors—wages and prices in the face of restricted

supplies of consumer goods; employment trends; interest rates; and Stock Exchange activities. The usual short summary of the Bank's own operations concludes what is presumably its semi-final, if not final, Report. We can only hope that one of the new organisations now being erected in the international field will assume the mantle which the B.I.S. lays down.

J. K. HORSEFIELD.

Contributions to the Study of Oscillatory Time-Series. By M. G. KENDALL. National Institute of Economic and Social Research. Occasional Papers IX. Cambridge University Press. 1946. 76 pp. 7s. 6d.

Mr. Kendall's studies of oscillations of series are a most valuable contribution to the analysis of time series. There are far too few of us nowadays willing to undertake such a large volume of heavy computational work even with assistance such as Mr. Kendall obtained from the National Institute of Economic and Social Research. The studies are valuable despite the fact that the conclusions are largely negative, indeed we may say that their value lies therein. The trade cycle as a fluctuation with a systematic periodicity has been dying for a long time and Mr. Kendall has done more than drive another nail into its coffin. He shows not only that common sense and mathematics give different periodicities to the same series but that different mathematical methods will give different results. Thus in a series of 480 items the periodogram suggests periods of 20 and 42 items, whilst the correlogram in so far as it suggests any periodicity at all indicates periods of 16, 33 and 44 items. But further, Mr. Kendall shows that with series of the length most frequently met with in economics, periodicities might appear simply from chance factors.

The studies consist of an analysis of two types of series that are either without trend or which have had the trend removed. They are examined for periodicity. The first type is that resulting from the analysis of economic data, and presumably because he has collected such data over a sufficient number of years Sir William (Lord) Beveridge receives some rather heavy handling both of his analysis of wheat prices from 1500 to 1869 and of a more recent analysis of British industrial activity since 1785. Mr. Kendall applies an arithmetical definition of a "peak" whereas Sir William Beveridge tends to use his judgment. Now a person who lays down a definition and adheres to it cannot be criticised on grounds of inconsistency whereas the person who uses his judgment lays himself open to detailed criticism. But the man who works to "rules" can be criticised on the ground that his "rules" are not laid down with sufficient judgment. Take for instance Mr. Kendall's definition of a peak as "a value which is greater than the two neighbouring values" and consider the series 92, 92, 93, 98, 102, 101, 102, 96, 93, 94, 93, 93. According to the definition this series would include three peaks, at 102, 102 and 94,

respectively. But if these were measures of economic activity and if one remembers the approximations of economic measurement one must surely admit the possibility of there being in fact only one peak and that during the period covered by the observation recorded as 101? This does not mean that my judgment is likely to coincide with that of Sir William Beveridge, but rather that I doubt the possibility of applying exact definition to economic data.

The second type of series considered by Mr. Kendall is experimental. There are four of these series of which the following is one:—

Let u_t be the t^{th} term of the series and the series be

$$u_{t+2} = 1 \cdot 1 u_{t+1} - 0 \cdot 5 u_t + e_{t+2}$$

where e_{t+2} is a random number. Now as an infinite series this series is heavily damped and correlations between u_{t+x} and u_t rapidly become negligible as x increases. Mr. Kendall calculates that the coefficient of correlation when $x = 20$ is of the order of 0.001. The contribution that Mr. Kendall makes is to show that with finite series the damping effect is very severely limited and in certain cases an appearance of very regular periodicity exists. Thus in a series of 120 terms a negative correlation exists between u_{t+x} and u_t of 0.365 when $x = 42$. (This is series 1c + 1f of table p. 29 and correlogram p. 32.) Another series of 120 terms ($1a + 1b$) seems to show marked periodicity every 8, 16, 24, 32, 40 and 48 items. If this series represented economic data over a period of years the economist examining it would almost certainly think he had "found" something. Mr. Kendall's work teaches us to look upon such periodicity with the greatest of suspicion because it can be obtained from the application of random numbers. The economist of course may reply that if such a periodicity can be built up then the so-called random numbers cannot really be random and the systematic element should be looked for in those 120 random numbers. Mr. Kendall's results seem comparable to saying that in a few random deals of cards some features are sure to exist which would *a priori* be considered abnormal. We must never forget that *a priori* any hand of cards is just as unlikely as one consisting of 13 spades and that systematic analysis would reveal some of its abnormalities.

Mr. Kendall points out that there are three main methods of studying oscillatory effects in time series. They are

- (a) Counting peaks, troughs or crosses and calculating the mean distances.
- (b) Periodogram analysis.
- (c) Correlogram analysis.

With justification Mr. Kendall seems to consider that correlogram analysis is the best of these methods, its disadvantage being the large experimental error requiring a long series to obtain significant results. We might therefore give some further attention to this factor, paying particular attention to series 1 generated according to the formula given above.

In series 1 very little correlation is expected between u_t and u_{t+x} when x is greater than 10. It is interesting therefore to analyse the distribution of the correlation coefficients when x is greater than 10 and to do this especially for the sub-series where the number of terms is small. I have done this very roughly for the sub-series of 60 terms each and find that the 320 correlation coefficients are approximately normally distributed, with an average about 0.0 and a standard deviation of the order of 0.3. In other words they seem to be distributed in a way that would be expected from calculating correlation coefficients from finite groups of pairs of numbers taken from an infinite series in which the pairs are not correlated. The point at issue is simply whether the spread of the correlation coefficients is approximately what might be expected. The conclusions so far reached are confirmed when the correlation coefficients of the sub-series consisting of 120 terms each are analysed in the same way. Again the distribution of the 160 correlation coefficients is about normal, the average not far from 0.0 but the standard deviation as would be expected from the larger number of terms used in calculating the correlation is smaller and of the order of 0.15.

In the sub-series of only 60 terms the effective number used for calculating the correlation coefficients is presumably smaller than 60, varying in fact from 10 to 50 and averaging only 30. Few statisticians would attach very much significance to a small correlation coefficient worked out on so few cases. In the sub-series with 120 terms the effective number of pairs used for calculating the correlation coefficients would vary from 70 to 110 with an average of 90 and the accuracy would be considerably greater.

It is true that at first sight the actual variation of the correlation coefficients seems to be greater than would be expected. One would expect the standard deviation to be of the order of $1/\sqrt{n}$ or say 0.2 for the sub-series of 60 terms and 0.1 for those with 120 terms, the effective values of " n " being, say, 30 and 90 respectively. It is these differences between 0.3 and 0.2 and between 0.15 and 0.1 which require further investigation and two lines of investigation suggest themselves. In the first place random numbers are not normally distributed and secondly it is possible that the spread of correlation coefficients is increased by the positive correlations between adjacent terms of the series.

Are we, therefore, to assume that correlogram analysis, which seems to be the best mathematical method available, ought to be abandoned for economic series of ordinary length because only long series justify this analysis? Cannot it be argued that there is a difference in that the fluctuations that the economist observes and the statistician tries to measure are real fluctuations? They are not simply errors of observation normally distributed nor do they arise from the application of random numbers. They are the effect of causes; any periodicity that analysis reveals is likely to be real

periodicity ; what is to be doubted is whether any such regularity is inherent in what might be called the generating equation of economic activity. If one concentrates upon any periodicity which happened to exist in recent years one might miss significant features of the fluctuation. Mr. Kendall has shown that a periodicity may result from random factors. But are we going to be any safer in relying on a very long series ? Do not conditions change with time and may not the "generating equation" itself change significantly ? It seems to me that systematic mathematical analyses of economic data yield results of very limited value in interpreting economic activity but not necessarily in recording it. We must continue to look primarily to the application of common sense in the application of economic analysis to current economic movements, each case being treated on its merits. But these expressions of opinion should not be taken as justification for not examining relevant facts carefully and for not analysing the position rigidly.

H. S. BOOKER.

The World's Hunger. By FRANK A. PEARSON and FLOYD A. HARPER. Cornell University Press, Ithaca, New York. Oxford University Press. 1945. 90 pp. \$1.50.

This book is intended for a popular audience and makes no attempt to give the basis of calculation of its numerous tables, or detailed sources. Nor is the statistical material dated. For these reasons, and perhaps also because of some sweeping and dogmatic statements on controversial matters, it will be less useful than it easily could have been to those who seek precise information on world questions of food and farming.

This is a pity. For the authors have brought together much valuable material on what is produced and consumed and where (though they measure consumption in terms of lb. dry matter instead of the more usual and more useful calories), and on the inter-relation of the various limiting factors to an expansion of consumption : extensive—adequate and reliable rainfall, type of soil, topography and temperature : and intensive—labour, machinery, etc.

Their conclusions are pessimistic, perhaps more pessimistic than the facts warrant. They discuss the ways by which the diets of "the hundreds of millions who are the world's downtrodden third" can be raised. There are three methods. First the world's present production of the more highly-prized animal foods might be divided more equally ; but to attain complete world equality, would mean to deprive even the lower third of consumers in the United States of over half its consumption of livestock products. Secondly, production might be increased ; but this is impossible ; livestock products are produced from grasses and grains and "in most areas it is practically

impossible to increase the production of forage". (The reader may query such a sweeping statement.) Therefore to feed the grains to animals would lead to starvation in humans. Thirdly, population might be reduced; but people are planning to eliminate the forces which reduce population.

In spite of the defects mentioned above, this is a stimulating book, and a useful book in that it dispels some false hopes and attempts to evaluate quantitatively what is and is not possible.

RUTH COHEN.

The Indian Rural Problem. By SIR M. B. NANAVATI and J. J. ANJARIA.

The Indian Society of Agricultural Economics. Bombay. 1944.
415 pp. Rs. 8.

Most writers on Indian rural problems spend an unconscionable time in recapitulating well-known deficiencies in methods of cultivation in India, and in blaming the Government for the lack of progress. Yet when it comes to proposals for reform they often go no further than to approve suggestions already made in official reports. The authors of *The Indian Rural Problem* avoid these pitfalls, and have succeeded in writing an admirably concise analysis of the problem and survey of the policy pursued, followed by a broadly based and radical programme of reform. Recrimination is treated as irrelevant, the important thing being to tackle the problem adequately in the future, and to secure the wholehearted support and enthusiasm of those chiefly concerned (i.e., the agricultural masses), without which no Government—Indian or alien—can hope to make substantial headway. Possibly less than justice is done to the present Government's attitude to and work in post-war agricultural reconstruction, but it is probable that some of the most important documents on this subject appeared after this book had been written, whilst it is hardly surprising that little has yet been done to implement these proposals in view of the political situation and the glaring absence of that wholehearted support which, as already said, forms a necessary prerequisite for any substantial reform.

The most interesting sections in the book are those dealing, at various points, with particular experiments in rural reform, whether undertaken by individuals (such as those described in the Appendix to Chapter IX) or by Provinces or States, and with the application of foreign experience to the Indian situation (especially in Part III, "Constructive Rural Sociology"). Foreign experience has been widely and wisely drawn upon with the object of discovering more fundamental solutions for the Indian problem than any which have so far been attempted or even envisaged by the Governments—Central, Provincial or State. What has been done and what might be done by Estate Farming of various types is often completely

ignored by writers on Indian agriculture, and the discussion on this subject (Chapter IX) is distinctly refreshing. Recent progress in Indian States is another subject often ignored, and it is clearly a great advantage to have, as we have here, co-operation between a representative of British India, on the one hand, and of a (highly progressive) Indian State, on the other hand. Above all the authors base their recommendations on recognition of the principle enunciated by Mr. Elmhirst (who, incidentally, first mooted the idea of founding an Indian Agricultural Economic Society) in his Presidential Address to the Quebec International Conference of Agricultural Economists, in 1938, that "such social factors as nutrition, health, housing, education and leisure . . . are part and parcel of the socio-economic responsibility of the modern state" and that it is urgent to link economic research with a wider understanding of the interplay of social and economic forces. The Indian Society of Agricultural Economics is, therefore, to be congratulated heartily on this, its first, publication, which attempts with great success to carry out one of the central objects of the Society.

It is only natural that a study of such a wide and complicated subject should evoke criticism and controversy on many points of detail and sometimes also on wider issues. I do not propose here to embark upon detailed discussion of particular points—a discussion which would occupy far too much space—especially as I am in full agreement with the authors' main contentions and proposals. But it must be noted that the omission of a bibliography is unfortunate, and that the authors are somewhat lax about dates and the use of dates for comparative purposes. In many cases no dates are attached to figures, publications and statements of facts, whilst the choice of dates in estimating trends (e.g., of agricultural production) are not always felicitous. Agricultural output and conditions are affected so seriously by particular (e.g., harvest) conditions, that it would have been better to rely more upon averages covering relatively long periods than, as is often done, on comparisons between single years. Various minor errors (possibly printing errors ?) need correction : for instance, the reference to lupins (instead of lucerne ?) on p. 357 ; the figure 9·8 instead of ·98 in the third column (bottom line) of the table on p. 37 ; the wrong date for the opening of the Suez Canal (p. 367) ; the statement that imports of food into Britain were maintained at a higher level during the war than before the war (p. 60) ; and the figure (5·8 ounces) for daily per capita consumption of milk in India (p. 61). But these defects could easily be corrected in a subsequent edition, and carry little weight in comparison with the very great merits of this interesting, broad-minded and well-informed survey of a most important subject.

VERA ANSTEY.

The Economic History of India: 1600-1800. By Radhakamal Mukerjee. Longmans Green & Co. 1945. 184 pp.

Full use has not yet been made of the very considerable materials relating to economic conditions and organisation in India before the 19th century. Prof. Mukerjee's study of conditions and trends between 1600 and 1800 attempts to fill in some of the gaps for this exceptionally interesting and important period. We find here a vivid description of rural life, of the indigenous industries, and of the trend, organisation and routes of both external and internal trade—illustrated by excellent maps—during the great commercial expansion of the 17th century, and during the subsequent dislocation and decline resulting from the break-up of the Moghul Empire and from Lancashire's competition in the cotton industry, which wrought such havoc amongst Indian handicrafts.

Many books have been written dealing with the rise and expansion of the trade between India and the West from 1600 onwards, but Prof. Mukerjee deals more fully than any previous writer with the daily life and standard of living of the "common people" at this time. In particular he attempts to estimate the movement of real wages from the end of the 16th century up to the present day. This attempt is most interesting, but also (perhaps) over-ambitious. He himself admits that "adequate and accurate data for a comparison of real and money wages between Alibar's time and to-day in Northern India are not available" (p. 27). Nevertheless he sets forth first the quantities of the principal food grains purchasable per rupee at different dates; next the wages prevailing at those dates; and finally an index number purporting to show the changes in the purchasing power of the prevailing wages for skilled and unskilled labourers, respectively. He concludes that, in 1938, "the real wages in the N.P. . . . are one-half to two-fifths of that in Alibar's time" (p. 54). Not only does the present agricultural wage buy much less food grain than could be obtained at the end of the 16th century, but ghee and milk products have been practically banished from the diets of the lower classes, whilst butter, oil and sugar have greatly increased in price.

These figures and conclusions deserve study. Their implications are, indeed, serious. But one cannot help feeling that the full, true story has not yet emerged. To what extent can the figures of prices and wages be considered "representative"? and, in any case, how far can real wages be taken as an index of the welfare of the masses in India? Wages are well known to be exceptionally "sticky" in India, but it is also universally recognised how greatly and quickly prices tend to vary from district to district and period to period. Without detailed study of the sources of these figures it is impossible to judge their validity for the purpose in hand, and Prof. Mukerjee does not discuss the sources in a manner that enables

the reader to form any opinion about their reliability and representativeness. Moreover, until quite recently the wage-earning class formed a minute proportion of the total population, whilst even to-day the bulk of the cultivators produce and do not buy a substantial proportion of their food.

In view of all the known facts it is not improbable that real wages have fallen since the end of the 16th century. The trend of population increase alone suggests that this may have occurred. Indeed, the Pax Britannica, the decline in deaths from various diseases, and the fall in infant mortality, combined with the pressure of population in the land, entailing widespread underemployment, may well mean that population has tended to increase more rapidly than productivity. The natural result would be a fall in average incomes, including a fall in real wages. But if this is the explanation, it is hardly fair to imply that the fall in real wages is the result of "British Rule", without pointing out that this trend should be attributed not to the inherent wickedness of the British Raj, but to certain fundamental social and economic trends and problems which will remain even when the British Raj withdraws. It is undeniable that British Rule has entailed certain unfortunate, as well as some fortunate, results. But it is shortsighted to overlook the fact that an independent and self-governing India will have to grapple with a number of fundamental sociological and economic dangers and problems.

VERA ANSTEY.

SHORTER NOTICES.

Conditions of Private Foreign Investment. League of Nations. 1946. 45 pp. 2s.

This is the report of a special joint committee composed of members of the economic, financial and fiscal committees of the League and other experts. It recommends in detail a code of good behaviour for both lenders and borrowers designed to promote foreign investment. Its proposals, all of which seem admirable, cover the whole of this field, although most of them are necessarily in somewhat general terms.

The Incidence of Local Rates in Great Britain. By J. R. Hicks and U. K. Hicks. 1945. Cambridge University Press. 64 pp. 6s.

This is No. VIII of the Occasional Papers issued by the National Institute of Economic and Social Research. It completes the trilogy on local rates by Professor and Mrs. Hicks, the two former papers being *Standards of Local Expenditure* and *The Problem of Valuation for Rating*. The average proportion of total income (after income-tax) paid in rates on houses was about 3.3 per cent. in 1938 and (since rates rose little during the war) about 2.6 per cent. in 1942. There were variations

between income-groups (the average being 3.8 per cent. for under £250 falling to 1.0 per cent. for over £2,000) and between districts. Rates check building; and housing subsidies should be higher in highly-rated areas in which it is desired to encourage rebuilding.

The Problem of Italy. By Ivor Thomas. Routledge. 1946. 96 pp. 5s.

This is a very readable and informative account of the economic problems of Italy. Italy is poor. She suffers from overpopulation and lack of raw materials. The way towards prosperity lies through lower birthrates, more emigration, and development of resources (especially in the Po valley), notably through hydro-electricity and more light industries, with the help of foreign loans.

Labour in the Philippine Economy. By Kenneth K. Kurihara. Stanford University Press and Geoffrey Cumberlege, Oxford University Press. 1945. 97 pp. 12s.

This book contains some interesting facts and photographs. On the "social justice" programme of President Quezon, launched in 1937, the author finds it difficult to draw clear conclusions. "On the one hand, it inspires labour to assert its rights; on the other, it tries to preserve 'the integrity of private property'." The fine words, quoted at length, do not seem to have buttered many parsnips—probably because the islands are overpopulated and poor.

Poverty and Social Change. By Tarlok Singh. Longmans, Green. 1945. 200 pp. Rs. 3-8-0.

Mr. Tarlok Singh has written a vivid, stimulating and perhaps over-optimistic little book, based mainly on his own (considerable) experience in the Punjab. Starting from the proposition that the first and foremost object of all agricultural planning in India must be to devise means for securing a large increase in the size of the units of management, and accepting the principle that ownership of the land should be dissociated from control over land-use, he suggests that the rights of ownership should be met by an "ownership dividend", and then proceeds to work out a system of joint village management, which in his opinion represents the most concrete and immediately practical form in which the general idea of "co-operative farming" can, at present, be expressed in India. This system, by increasing the efficiency of agricultural labour, will necessarily reduce the number of persons who can be employed as cultivators in a given area of land, and hence must be accompanied by the creation of new (i.e., industrial) employment to absorb those displaced from the land. Joint village management will, then, be as much concerned with industrial as with agricultural production and organisation, and

—in varying forms and with various degrees of state action and state assistance—will undertake experiments which may ultimately be expected to revolutionise the whole economic system, without, however, any direct break with the past at any particular moment.

The success of such a scheme obviously depends first and foremost upon securing the wholehearted co-operation of the masses. If, where, or in so far, as this can be done, this line of development is most promising.

Economics of Post-War India. By S. K. Muranjan. Second Edition. Hind Kitabs, Bombay. 1946. 205 pp. Rs. 5-12-0.

The second edition of this interesting little book, despite its four new chapters, still consists essentially of a series of independent commentaries upon various transitional (and some longer term) aspects of post-war reconstruction in India. There is no attempt to treat the whole subject in a comprehensive fashion. This has the advantage that Mr. Muranjan can avoid mere description and can concentrate upon the problems—mainly financial and monetary—in which he is chiefly interested, but it has the disadvantage that from time to time one is uncertain what his assumptions are. Many of his incidental remarks and suggestions raise doubts and questions in the reader's mind, and one is left with the feeling that more information and much fuller discussion is necessary before sound conclusions can be drawn or future policies formulated.

It is to be hoped, now that war-time statistics are to be released, that Mr. Muranjan will eventually expand his work and deal more systematically with India's very difficult, but most interesting, reconstruction problems.

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Fixed Costs

By W. ARTHUR LEWIS

THIS article is concerned with the case where similar services are supplied by two different industries, one or both of which has a high ratio of fixed to variable expenses. Gas and electricity and road and rail transport are the outstanding examples, and special reference will be made to them. It has always seemed difficult to fit this type of case into the general rule that price should equal marginal cost because it has never been clear what marginal cost means in such contexts. The first problem is therefore to define the line between marginal and fixed costs.

I. THE ANATOMY OF FIXED COSTS

1. In welfare economics the cost of something is the value to other producers of the resources which are used to produce it; cost is measured by computing what expenses would be saved if production were curtailed and resources released for use elsewhere. This cost differs from cost in the business or accounting sense, which is simply the sum expended on production, because there are expenses which the business man cannot escape by curtailing his output—e.g., the sum invested in specific equipment which is no longer required. The economist's costs are those which can be escaped; fixed costs are those which cannot: escapability is the essence of the distinction. It is not, however, a simple distinction, because some costs are escapable in some senses but not in others, and we must spend a little time on it.

Fixed or inescapable costs fall into four categories:

- (a) some are inescapable in the short run but not in the long run;
- (b) some are joint costs, and inescapable only in that sense;
- (c) some are inescapable for small but not for large changes of output; and
- (d) some are inescapable in all senses.

2. An entrepreneur makes commitments in relation to the level of output which he expects, and once he has committed himself to expenses appropriate to that level, he finds that some of his commitments cannot be altered rapidly even if output contracts permanently to a lower level. Some commitments can be escaped at once, but others take time. His commitments are of two classes; commitments under contracts to hire, and commitments by purchase, by investment in construction, or by other methods of capital creation.

Commitments under hiring contracts are the easier class. All such contracts, whether for manual labour, for administrative staff, for machinery, buildings, or for other services, have a time limit.

The contract may be escapable at once, because the time limit is short, or because there is provision for discharging it at short notice or because obligations under it (e.g., a lease) can be transferred. The cost immediately escapable may not be as great as that which can be escaped ultimately, when the contract expires, if there is some penalty for immediate discharge, or some loss on transferring the obligations; and the contract may be continued temporarily. But sooner or later the contract expires, and with that comes complete escape.

Investments in assets are more complicated. With these, too, immediate escape is often possible, and its neglect has been one of the commoner errors in economic discussion. The immediately escapable cost is user cost.¹ This may not be as great as that which can be escaped when the asset expires and its replacement falls due. Thus hiring contracts and assets are in the same category. Nearly all commitments are immediately escapable, but the cost escapable now may not be as great as that which can be escaped ultimately when the commitment has expired and a new commitment is necessary if production is to continue. Assets differ from hiring contracts only in that a small percentage of assets are of infinite durability, and with these there is only an immediately escapable cost to consider.²

The distinction between short-run and long-run cost corresponds to this distinction between immediately and ultimately escapable

¹ This is a difficult concept. User cost for any year (or unit of output) can be computed as follows.

(i) The asset can be sold, and the present value of its expected yields in each future year of life, plus its scrap value (also discounted), must exceed the price for which it can be sold. Assume n years of working life; if life is determined by obsolescence, the relevant yields are those of the first n years, but if it is determined by wear and tear, the relevant yields are those of the n most profitable years (after discounting). The corollary is that the yield expected this year must equal at least the difference between the price and the expected yield of the remaining $(n-1)$ years of working life plus scrap value, if this difference is positive. This is the minimum value of this year's user cost. If the price is not greater than the sum expected in the other $(n-1)$ years, this minimum user cost is zero.

(ii) This year's yield must also exceed the difference between the price that could be obtained for the asset this year and next year's price if used this year. If this year's expected yield exceeds the sum stipulated in (i) but not this sum, the time pattern of yields in outside uses is different from the time pattern of yields here, and the asset should be used elsewhere this year and returned to use here next year (but this assumes physical wear and tear this year to be the same in either use).

(iii) This year's yield must also exceed the expected yield from any future year which is excluded from use by this year's use. If working life is determined by obsolescence, the value of this is zero. If it is determined by wear and tear, this year must be one of the n most profitable; user cost is the yield of the $(n+1)$ th most profitable year. (This assumes that in its effect on the life of the machine use in any one year is a perfect substitute for use in any other. The problem is more complicated but not insoluble if this is not so).

This gives us three minimum values for user cost. The relevant one is whichever is the largest. User cost can be zero if obsolescence determines life, if the value in outside uses is small relatively to value here, and if the value in outside uses does not diminish. It cannot be zero if life is determined by wear and tear, for it must then equal at least the yield of the $(n+1)$ th year.

² The easier escape from hiring contracts may also be illusory. From the point of view of social cost it is irrelevant whether an asset is hired or purchased; what matters is whether it is specific or not. E.g., if specific labour is dismissed the entrepreneur escapes a private cost, its wage, but if the labour simply becomes unemployed, there is no social saving.

cost. In practice, however, neither of these distinctions is as simple as is currently implied. Some commitments expire at once, some next week, some next month, some next year, and so on. Escapable cost is not just short-run and long-run, immediate and ultimate. It varies for as far ahead as you care to look. Furthermore, it does not vary continuously with time. If commitments of equal cost significance expired in constant procession, one in each month, and if renewal could then be put on to a month-to-month basis, short-term cost would rise month by month steadily nearer to long-term cost, until all commitments were on a monthly basis. But none of these conditions is fulfilled. The dates at which commitments expire have no regular pattern, and the sums involved vary widely, so that the fluctuations in short-run cost are arbitrary accidents. Then, as each commitment falls due for renewal, say for x years, all those due to expire during those x years have to be considered, since if any of those will not pay and will be discontinued, this may not pay either. The expiry of a single commitment may therefore bring large numbers under review and cause a great jump in immediately escapable cost. And, as each commitment is renewed, short-run cost, which had risen high to include renewal cost, now sinks again to the level of the temporarily inescapable. There is no such quantity as "the marginal cost" of output; there is not even a simple choice between two quantities, short- and long-run cost; there is a large variety of costs to choose from, depending merely on how far ahead you choose to look, and this collection of costs itself varies from day to day, as current commitments alter.

3. Some costs are inescapable only in the sense that they are joint costs. For example, the traffic from A to B may be permanently in excess of the traffic from B to A, and some vehicles will always be returning empty. The marginal cost of using those vehicles is small, and the inescapable cost is heavy. If, however, there were no traffic from A to B, the cost of running from B to A would be easily escapable, and it is inescapable only because it is a joint cost with the cost of running to B. Where there are joint costs neither can be considered escapable or inescapable by itself. Together, the joint cost is escapable; separately, the cost of each part has to be found by difference, by subtracting the yield of the others from the total cost.

Depreciation is one of the most important cases of a joint cost inescapable only in this sense. When an entrepreneur is considering adding extra equipment to his undertaking, he knows that it may yield output in each year of its life, but he is unable to allocate a cost to the output of any one year except by considering the yields of other years. Each year's use, assuming the investment made, has a user cost, but the sum of these user costs may be much less than the cost of the asset, and the difference cannot be allocated to each year, but must be recouped from surpluses. If the industry were expected to be in stationary equilibrium, the amortisation

attributable to each year would be easily calculable. Since there is stationary equilibrium, the amount of the surplus in each year is the same, and it must be a sum which, deducting interest on the cost of the equipment, will, when invested yearly at compound interest, yield at the end of the life of the equipment a sum equal to its cost less scrap value. But where conditions are expected to fluctuate, so will the surplus. It may be that the equipment can be kept fully occupied throughout its life, but only by charging different prices at different times, high when demand is strong, and low while it is weak, so that the surplus will sometimes be great and sometimes be small; but again it must be expected that the sum of these surpluses, at the appropriate rate of interest, will equal the cost. It may even be that in some periods no price that would yield any surplus is low enough to keep demand at the level that will occupy the equipment; then the installation of the equipment is justified only if it is expected that the surpluses when demand is strong will be adequate when summed to cover the entire cost. This is only another way of saying that where fluctuations in output are expected, the cost of the equipment, looking ahead before investment is made, is attributable only to periods when it is fully occupied—the entire cost is chargeable to the peaks in proportions depending on what charge keeps the peaks fully occupied.¹

The net result is that, before any commitment is made, it may be foreseen that there will be successive periods of full and excess capacity. In periods of excess capacity marginal output will give rise to smaller escapable costs than in periods of full capacity,¹ but cost at such periods will be inescapable only in the sense of being a joint cost with other periods.

4. The third category of inescapable commitments consists of those where an expense does not vary with output because it is indivisible. Indivisibility need not be identified with some concrete piece of equipment; it may merely be that a certain expense varies with output, but in smaller proportion. The indivisible element is the difference between the total expense and the product of quantity-of-output times marginal cost, and will itself vary with output if marginal cost is not constant.

Indivisible expenses and fixed costs are frequently taken as synonymous, but they are not. Fixed costs are those which are inescapable, and indivisible costs may be immediately escapable. A railway can decide to run more or fewer carriages, or trains, or to keep open more or fewer stations, or, taking the matter to its logical

¹ This assumes that life is determined by obsolescence, and that off-peak user cost is zero. If life is determined by obsolescence, off-peak user cost may be zero. If it is determined by wear and tear, off-peak use is at the expense of later peak use, and off-peak use now therefore has the same user cost as peak use now, and there is no difference between peak and off-peak escapable cost; nevertheless, because some of the equipment is unused in the off-peak, peak use must be expected to yield a surplus over escapable peak cost sufficient to cover the off-peak deficiency.

conclusion, to close down altogether. Whatever the indivisible unit, if the expenses attributable to it are escapable, they must be covered if the unit is to be maintained. Confusion on this point has been due to a tacit acceptance of the unit of product as being the unit on which the calculation of economic cost must be based. But there is no greater significance attaching to the passenger in transport than there is to one or other of the indivisible units required for his conveyance, and if the cost of any unit is escapable it must be covered, even though the marginal cost of the product is zero. Marginal cost is not the only real social cost, and indivisible cost is not necessarily fixed.¹

5. When we say that some costs are inescapable in all senses, we naturally refer to commitments which have already been made, since all costs are escapable *ex-ante*. If in any given situation where commitments have been made we include in escapable costs, long-run escapable and not merely short-run costs, escapable joint costs, and escapable indivisible costs, we are left with two classes of inescapable costs, which constitute the difference between cost to the economist and cost in the accounting sense.

First, we have included in long-run escapable costs all assets which have to be renewed. That leaves us with assets which do not have to be renewed. There are two classes of these, permanent assets and assets which are not renewed only because demand does not justify renewal. Taking permanent assets first, the analysis depends on whether the amount of these varies with output, i.e., they are divisible (e.g., the amount of land required for rail or road tracks depends on the amount of traffic) or whether they are indivisible (e.g., the legal expenses of floating a company). (a) The use of permanent indivisible assets gives rise to no social cost, unless these assets are useful in some other industry; the difference between the price that they would

¹ A good deal of the current analysis of monopoly makes nonsense of itself because it fails to recognise this. All costs but marginal costs are said to be relevant only in the long run, whereas indivisible costs are relevant to even the most short-run analysis to the same extent as divisible ones, i.e., to the extent to which they are immediately escapable. Entrepreneurs regard most of their overhead costs as escapable indivisible expenses, and refuse to produce unless they are covered. Economists who think that only marginal costs should count regard this obstinacy with a mixture of surprise, pain and contempt, and are driven to explain it away by calculating "the degree of monopoly power". No fruitful analysis of monopoly can be based on marginal cost only.

In this respect public utility engineers are well ahead of most economists who write on the theory of costs. The latter usually treat costs as being a function of output only. The former divide costs into those which vary with output, demand related standing costs, customer costs, and the residue. The first is generally known as prime cost. The concept of demand related costs is another way of expressing the fact that cost cannot be computed unless we know whether the supply will be taken at the peak or not, and actually the economist's marginal cost can be adapted to take care of this (though it usually is not). Customer costs are indivisible costs varying with the number of customers and not with the amount each takes, e.g., the cost of wiring houses. The residue is the difference between the total and the other three. The simple view of cost as a function of quantity of output only, which elevates marginal cost to the rank of being the only social cost that matters, originates from theories in which all factors of production are assumed to be divisible and non-specific; its transfer to fields where there is a high ratio of fixed costs is untenable.

fetch and their original cost is a cost in the accounting but not in the economic sense. (b) Whether the use of divisible permanent assets gives rise to social cost, over and above sale value in other uses, depends on whether the undertaking is working to capacity or not. For example, if it is, and an increase in traffic requires the purchase of further land, the cost of land varies with traffic and enters into marginal cost, but if the undertaking is working below capacity, and existing tracks can take further traffic, the cost of land does not enter into marginal cost, and is an accounting but not a social cost (apart from its value in other uses). (c) Then there are assets which are not permanent by nature, but which are not being renewed because demand has contracted. E.g., if demand has contracted 25%, the renewable 75% enters into long-run escapable cost, but the other 25% does not, and is an accounting but not a social cost.

The other main source of difference is that accountants are concerned with original cost, but economists with replacement cost. When the latter is below the former, escapable cost is less than original cost. The financial difficulties of this will be referred to in the next section.

II. COST AND PRICE

1. It has now become an axiom that if the price mechanism is accurately to allocate resources, price must equal marginal cost, and recent writers have said even that this rule simplifies the administration of state undertakings since it is virtually the only instruction that need be given to managers to determine output. We are now in a position to grapple with some of its hidden difficulties.

They are four, corresponding to the categories of fixed cost :

- (a) the fact that there is a whole range of marginal costs, depending on how far ahead one looks ;
- (b) the fact that marginal cost may fluctuate from one moment to the next ;
- (c) the fact that indivisible escapable costs must be covered ; and
- (d) the fact that the accounting and the economic cost are different.

2. If an industry is working at full capacity the immediately and the ultimately escapable marginal costs coincide. But if there is excess capacity, the immediately escapable may be less than what is ultimately escapable as contracts or assets expire, and looking ahead, there is a whole range of marginal costs from which to choose.

In perfect competition price equals the immediately escapable marginal cost and fluctuates with it. There is one exception. It may be that at a price adequate to cover renewals demand would not be sufficient to occupy all the equipment, but that at a price equal only to immediately escapable cost it would occupy more equipment than is in existence. This is the familiar case where short-run marginal cost rises vertically as full capacity is reached. In this case price will exceed short-run marginal cost, but be less than

long-run marginal cost, to an extent depending on elasticity of demand.

The case for basing price in conditions of excess capacity on the immediately escapable cost is that the fullest use is thereby made of existing resources. Suppose, for example, that demand contracts in an industry where the equipment is specific but ultimately renewable. Sooner or later the workable equipment will contract and an equilibrium price be established adequate to cover renewals. But if the price is maintained at that level in the immediate present, while there is excess capacity, some demands which would willingly have paid immediate marginal cost may be excluded at a price equal to long-run marginal cost, and specific equipment is less utilised than it ought to be—a loss of output which continues as long as the equipment lasts, but no longer.

Against this advantage must be set a disadvantage. If the price is fixed at immediate marginal cost so long as the excess capacity lasts, the industry makes a loss not only on the excess capacity, but on all the specific equipment used, including that proportion which is permanently needed, and which must be renewed. There may only, from the long-run point of view, be 10% excess capacity, but the industry will be unable to earn full amortisation quotas even on the 90% which has to be renewed. This transfer of income to the consumer is a gift which he never expected, to which he has no particular right, and which he will receive only temporarily while the excess capacity lasts. The consequences of this are more serious than a mere transfer of income from investor to consumer, for an industry which does not earn its amortisation quotas may have difficulty in renewing the 90% capacity that ought to be renewed, partly because in these days internal reserves are so large a part of the total new investment, partly because, since it has been making losses for some time people will be reluctant to invest in it even though there is a case for a 90% reinvestment, and partly because it is particularly difficult to obtain monies for new investment when an equal or prior claim on all returns must go to existing share and debenture holders who require satisfaction in respect of investments that still have not paid—a difficulty escapable only if a firm is reconstructed every time such circumstances occur.

If price were based not on short-run but on long-run marginal cost, no demands would be served that could not in the long run be maintained, but full amortisation would be earned on all assets which must be renewed, and only to the extent that renewal is needed. Where there are no close substitutes for the product this would probably make little difference to the output of the industry,¹ since demands

¹ Apart from income effects; consumers will not have made a windfall gain from investors, and to the extent to which their expenditure patterns are different, outputs of the industries on which they would spend are affected. There will also be short-run differences in the propensity to consume.

are not as elastic in the short run as we like to think. Where two similar industries are competing, e.g., road and rail, it will make little difference to their joint output, but the distribution of that output between them may be significantly affected. For example, suppose a long-run trend in favour of road transport at the expense of rail transport. Then if rail charges are based always on long-run cost, road transport will be larger than it would be if rail charges were based on short-run cost, and it will always be larger than it ought strictly to be. But the difference is only one of time; at any moment the situation will be in long-run (moving) equilibrium instead of still on the move towards it—adjustment is speeded up, but is faster than it should be. It is not obvious that this disadvantage is greater than the disadvantage of having an industry unable to earn amortisation quotas which it will require.

More serious might be the repercussions on the process of eliminating excess capacity. If price equals only immediately escapable cost, the loss of amortisation quotas is a powerful eliminator of redundant firms, though experience shows that the agony may be very long-drawn-out, and that it is not always the right firms that disappear. If price is to be kept at the level of long-run cost the marginal firms are not so easily dislodged, and some scheme for the elimination of the less efficient may have to be applied unless the differences in efficiency are marked. The technical difficulties and the cost of applying such a scheme have to be considered, and may well be decisive in industries where competition on the basis of short-run costs would be fairly rapidly effective. But where we are considering public utilities or state enterprises operated as monopolies, this kind of consideration is hardly relevant, since it is not whole firms that have to be eliminated but parts of a single firm. In such cases the earning of needed amortisation quotas seems the decisive issue.

3. The second difficulty is that where there are fluctuations in demand or supply there will be fluctuations in price. This will be so if price is equal to immediately escapable cost, because that necessarily alters with the passage of time. But it will also be so even in cases where there is no permanent excess capacity, but only periods of temporary excess capacity which are foreseen before the commitment is made, and which are therefore part of the long-run equilibrium situation.

Regular price fluctuations are not much of a problem. It is not always technically possible to arrange for such fluctuations; e.g., in electricity this requires a meter which records the amount consumed in each part of each day of the year, and such meters were not invented until fairly late in the history of the industry. Neither is it always convenient that the price fluctuations should follow changes in demand too closely. Consider, for example, the situation in suburban passenger transport. At the peak hour of the morning the 'bus travels into the city packed; since it has to return to its depot, the marginal cost of taking persons out of the city is negligible, and if price is to

be based on marginal cost they should travel practically for nothing. As the peak passes, however, the balance of inward and outward passengers begins to be readjusted; gradually the fare to the city should fall, and the fare from the city rise; and in the evening the fare out should cover nearly all costs, and the fare in be virtually zero. Fares which followed the changes in the balance of traffics too closely would be a nuisance, and most people would prefer a limited number of changes (if any) which only broadly reflected the changing costs. Allowing for these difficulties, regular and foreseeable fluctuations in price are not much of a problem.

Irregular and unforeseeable fluctuations, are, however, a nuisance. Such fluctuations are not so great a nuisance in respect of commodities or services where an organised market can be built up, such as cotton or tramp shipping, especially if the organisation can include a futures market, but they are certainly a nuisance in other fields. This is so partly because in an uncertain world one likes to have as many certainties as possible. But it is also partly because, where prices fluctuate the consumer tends to suspect discrimination, and to feel that the price may have risen at the moment he arrives not solely because the impersonal supply and demand factors have changed, but rather because he personally is not as favoured a buyer as some one else. This is one of the reasons why uniform prices have been enforced by the law on railways and taxicabs, and by custom on department stores, hotels, professional men, and in many other fields.

Here again we have to compare the advantage of securing fullest hour-by-hour utilisation of resources with other disadvantages. Foreseeable regular changes in price are fully allowable, but the case for evening out the irregular fluctuations seems to be overwhelming, at least in public utility industries.

4. The third difficulty in equating price to marginal cost is that it leaves uncovered escapable indivisible expenses which ought to be covered if the retention of these resources by the consumers of this commodity is to be justified. Where there are escapable indivisible expenses the rule that price must equal marginal cost is inadequate; the rule should be rather that price must be not less than marginal cost, and there must be enough surplus to cover escapable indivisible expenses. This is obvious enough if the indivisible cost is a "customer cost", incurred for one customer only, e.g., the cost of connecting his house for electricity, which does not vary with the amount consumed. But it applies equally if the indivisible cost benefits a number of consumers, e.g., the laying of a main for the whole street, or all the consumers. The method of charging which most nearly secures the correct allocation of resources is the two-part tariff, with the variable charge equal to divisible marginal cost, and the fixed charge taking from each consumer the customer cost plus, as contribution to the indivisible expenses, such amount as he can afford to pay. The second

nearest approach is price discrimination. Charging the same price to all buyers comes, from this point of view, a poor third.

These methods of charging recover the indivisible cost from consumers' surplus. There may also be a producers' surplus from which it might be recovered. A producers' surplus will exist if marginal cost is rising, and it is important to distinguish different types of surplus. Marginal cost may be rising because applying more of the variable to the indivisible factors yields diminishing returns; or it may be rising because the price of the variable factors rises as more is purchased. In the former case the producers' surplus accrues to the undertaking. As we defined an indivisible cost not as the cost of an indivisible factor, but as the difference between the total expense and the product of quantity-of-output times marginal cost, we have already deducted this surplus in order to arrive at the indivisible cost, and therefore no contribution is available from this type of producers' surplus. If marginal cost rises so fast as to equal or exceed average cost, there will be no indivisible cost in this sense, though there may be indivisible factors. If marginal cost is rising because some variable factor is in inelastic supply, the surplus will be accruing to the undertaking if the variable factor is an asset of which it is purchasing or hiring successive units at rising prices; but it will be accruing to the owners of the factors in the hiring or purchase of which no discrimination is possible. All surpluses accruing to the undertaking are already accounted for. The only producers' surpluses available for consideration are therefore those which accrue to outside owners.¹ Another producers' surplus of this kind may exist even if the factor is not in inelastic supply, if the price that must be paid for it exceeds what it could earn in other industries, e.g., because minimum wages are fixed by trade unions—the railways used to complain strongly because their wages were more closely regulated than wages in road transport.

Such producers' surpluses, together with what is available from consumers' surplus, ought certainly to be included in the calculation to decide whether the continued incurring of escapable indivisible costs is justified or not. It is unlikely that they can be made available to the undertaking, but whether they are available or not they ought to be included in the calculation, and precision requires that we should say, not that the sum available from consumers' surplus must cover the indivisible cost, but that that sum must cover the indivisible cost less producers' surpluses accruing to outside factors.

The principle underlying the two-part tariff and simple price discrimination is that those who cannot escape must make the largest contribution to indivisible cost, and that those to whom the commodity does not matter much may escape. The man who has to cross Dupuit's

¹ In this case marginal private cost will exceed marginal social cost, which is based on the price of the factors and not on their marginal cost to the undertaking. It is social cost which is relevant.

bridge to see his dying father is mulcted thoroughly; the man who wishes only to see the scenery on the other side gets off lightly. The public's attitude to price discrimination is not capable of rational exposition. Broadly speaking, it dislikes discrimination, but special cases are tolerated. Discrimination according to income is accepted from doctors, the government or electricity undertakings, and used to be accepted from shopkeepers, but would now probably be resented if tried by the baker or the 'bus conductor. On the railways it is freely accepted as between commodities, but not as between different parcels of the same commodity. The law allows a lower charge to be made to a man who has canal transport open to him, but the railways may not discriminate for or against a farmer whose land happens to be more fertile than that of his neighbour.

Where there are escapable indivisible expenses to be covered the case for discrimination is clear. It secures an output nearer the optimum, and levies the indivisible cost on those who get the greatest benefit (measured by their consumers' surplus) from retaining the indivisible resource in this line of production. Moreover, it is possible in some cases that the net result may be that everyone pays a lower price for the commodity than he would if there were no discrimination. This is certain if the undertaking is trying to maximise its net revenue and (but not otherwise) if marginal divisible cost is falling. But it is also possible if the undertaking is out merely to cover its costs and could cover them without discrimination, since reducing the price to some persons with elastic demands may increase the surplus over marginal cost which they contribute, and thus allow the price to others also to be reduced. Nevertheless, discrimination between persons as such is always awkward; discrimination is much easier if impersonal categories can be found which more or less arrange themselves in order of elasticity of demand, such as discrimination between types of traffic, between different uses for electric current, or even discrimination according to income. In what follows we shall speak of an industry charging different prices for different services when we mean charging any user on the basis of some impersonal category prices which yield different surpluses over marginal cost, allowing for the fact that the marginal cost may be different, e.g., the difference in the marginal costs of transporting 20 tons of coal and 20 tons of hay.

If the available consumers' surplus is not by itself enough to meet the indivisible cost, but would do so together with the producers' surplus, the undertaking should be maintained. It will, however, run at a loss unless it is allowed to discriminate between its suppliers. A subsidy is then the only way out, if the optimum allocation of resources is to be maintained, but this is not as good a solution as would be some method that collected the producers' surplus, since those who should pay are those who receive the benefit.

When an industry with escapable indivisible expenses is in competition with another offering similar services, the rules for pricing become

more precise. In no case should the price of any service be below the marginal cost of performing it. It may exceed marginal cost if the other industry's marginal cost is higher, but in that case it should not be as high as the marginal cost of the other industry, or the other industry may capture trade to which its marginal cost does not entitle it. An industry then performs services only where its divisible marginal cost is the lower, and collects revenue towards its indivisible expenses only to (not more than) the extent that it can perform the service more cheaply than the other industry.

For two industries to exist it must be the case that each industry performs some services at lower divisible marginal cost than the other; from each of its services it will collect towards its indivisible expenses. The amount of revenue which an industry can so collect, however, depends on the margins between its divisible marginal costs for each of its services, and what would be the divisible marginal cost of these services to the other industry if it were performing them.

No problem arises if the surplus each receives is adequate to cover escapable indivisible costs. The interesting problems arise if one or both is unable to do so.

If one can cover its escapable indivisible cost but not the other, the one which cannot ought to be closed down (or not started if the commitment is not yet made). There is only one case which seems to throw doubt on this principle. Take the following simplified assumptions. There are two industries, X and Y, both with indivisible costs, and each offers the same services, *a*, *b*, *c* and *d*. X has lower marginal costs for *a* and *b*, and Y lower marginal costs for *c* and *d*. Suppose that there is only one unit of each service, and that the difference between Y's marginal cost and X's marginal cost on *c* and on *d* is so great that Y can earn enough surplus on *c* and *d* to cover all its escapable indivisible costs, and its future is assured. The problem then turns on *a* and *b*. Suppose the cost situation to be as follows, in money units:

				Divisible costs	Indivisible costs	Total
				<i>a</i>	<i>b</i>	
X's costs	..	..	..	1	1	2 4
Y's costs	..	..	..	2	3	already covered 5

If the X industry is maintained it should serve *a* and *b* because its marginal costs are lower. As far as competition with Y is concerned, it can extract from *a* and *b* prices of just under 2 and 3 respectively, which would yield a surplus of just under 3 and amply cover its indivisible expenses. But suppose that, quite apart from competition, *b* cannot afford to pay a higher price than 1, while *a*, in the absence of the alternative service offered by Y, would be willing to pay as much as 4. It may be argued that the correct solution is to keep the

X industry going, to charge b only 1, and to charge a 3 but prevent it from transferring to Y, either by legislation or by some arrangement compelling Y to charge more than X. In this way both a and b will be served by X at a total cost (4) lower than if they were both served by Y (5), and anyway if the X industry were not maintained b could not be served at all since it could not afford Y's marginal cost. This is one of the railways' most seductive arguments in the current controversy. The valuable high-rated traffics, it is said, ought to be kept to the railway to contribute towards indivisible expenses to which the low-rated traffics cannot afford to contribute much,¹ and since the railway needs to extract from them more than it would cost to send them by road, some arrangement must be made to prevent road transport from getting them, e.g., compelling road transport to adopt the railway's schedule of charges. It is an attractive fallacy. To return to our example, the argument is really that the service a , though it could get itself performed by Y for 2, must pay 3 to X in order that b may be carried at a price it can afford, and that this is justifiable because the real value of the service a must be at least 3 or it would not be bought at that price. The answer is that in calculating the consumers' surplus on the service a performed by X, it is wrong to exclude the possibility of getting the same satisfaction more cheaply from Y; this is as if my consumers' surplus on bread were calculated on the assumption that no potatoes or other foodstuffs were available. Given that the Y industry exists, and offers the service at 2, the maximum consumers' surplus on a bought from X is 1, and it would be invalid to charge more just so as to provide resources from which b can be served. If anyone considers that b is a terribly important service,² then by all means subsidise it sufficiently to make the X industry able to meet its costs—whereupon both a and b will rightly

¹ Actually it is doubtful whether the high-rated traffics do in fact contribute more than the low-rated. Receipts per ton mile (c.f. *Annual Railway Returns, 1938*) suggest that they do:

	Coal	Classes 1-6	Classes 7-21
pence per ton mile	1.08	0.96	2.00
But receipts per wagon mile suggest the opposite:			
pence per wagon mile	10.51	9.38	5.62
The low-rated traffics have higher marginal costs per wagon mile, but is the difference as great as this?			

² One of the railway arguments is rather like this. It is important, it says, that the heavy-rated traffics should continue to be carried, and if the other traffics go by road these traffics will have to pay more to the railway, or if they cannot afford to pay enough to keep the railway going, the railway will have to close and the traffics either not be carried or go by road at enormous cost.

Assume first that the consequence would be that the heavy traffics would pay higher rates by rail, enough to maintain the railway. This, the argument runs, is bad, because it raises the prices of raw materials, and secondly because in altering the ratio of transport costs of raw materials to finished products it gives incentives to alter the location of industry. The first argument seems curious; if an alteration in rates structure lowers costs on finished products and raises them on raw materials, the final price is not necessarily affected; indeed, if we assume that the railway remains but cannot retain the finished products in free competition, then the final price is lowered because total transport cost is lowered. The second is true, but not conclusive; the location pattern has grown up on the basis of a distorted rates structure;

be served by X—but such a subsidy should come from general taxation ; why pick on *a* and compel it to subsidise *b* ?

It is also possible that if there is competition between two industries, each with indivisible expenses, neither may be able to pay its way. Consider, on the same assumptions as before, the following cost situation :

		Divisible		Indi- visible	Divisible		Indi- visible	Total
		<i>a</i>	<i>b</i>		<i>c</i>	<i>d</i>		
X's cost ..	..	1	1	4	3	3		12
Y's cost ..	..	2	3		1	2	5	13

Neither can pay its way if both industries are established. The X industry will secure *a* and *b*, but the maximum revenue it can get from them is 5, while it needs 6 to keep alive ; and Y will secure *c* and *d*, can get only 6, but needs 8. The essence of this situation is that if we take the services for which either of these industries has lower divisible costs, the sum of its divisible and indivisible costs exceeds the divisible costs of the other for those services, so that total costs if there is only one industry must be smaller than if there are two.¹ Consequently, if both industries have indivisible costs and neither can pay when the correct pricing rules are applied, only the one with the lower total costs should be maintained.

The net result may be summed up as follows. Where there are indivisible expenses, price should be not less than marginal cost, but not as much as the marginal cost of competing industries, and the undertaking should not be maintained unless the surplus over divisible costs covers the indivisible expenses. The only exception to this is the case where two industries offer the same services and neither pays if they follow these rules ; then only the one with the lower total costs should be retained.

5. The fourth consequence of equating price with escapable cost is that the undertaking's receipts may be greater or less than its

if now rates are altered, we may get a different location pattern, but it will be just different, not worse—it may be better since it corresponds more to real costs.

If the consequence would be that heavy traffics could not alone maintain the railway, parts of which then had to be closed, and could not then afford the high cost by rail, they cannot be important traffics in any economic sense. But, as argued above, if they are important, let them be subsidised, but out of the general revenues. This applies equally to the contention that the railway should not be allowed to contract because of its usefulness in war. If we must maintain in peace time railway facilities larger than our peace-time need, the government should subsidise the railways to the necessary extent. Given a subsidy, competition should then be on the basis of the rule that price must be not less than railway marginal cost but not more than the marginal cost of any available alternative form of transport.

If the consequence would be that the railway would contract and the traffics go by road at high cost, no action is necessary. If they can go by road at high cost they could pay the same price to the railway. If that price would not keep the railway alive, then road transport is actually cheaper and the railway ought not to be maintained.

¹ Take the sum of X's divisible and indivisible costs for *a* and *b* as *p*, and the sum of Y's divisible and indivisible costs for *c* and *d* as *q*. Y's divisible costs for *a* and *b* are less than X's divisible and indivisible, say *p* - *m*, and X's divisible costs for *c* and *d* are less than Y's divisible and indivisible, say *q* - *n*. Then if there are two industries, total costs are *p* + *q*. But if there is only one industry total costs are either *p* + *q* - *n* if it is X, or *q* + *p* - *m* if it is Y.

expenses. This may happen whenever accounting costs are different from escapable costs, in the circumstances distinguished in Section I.5.

If price equals marginal cost, a loss will be made on inescapable expenses unless marginal costs rise until they are equal to the average of all costs, escapable and inescapable. If marginal cost exceeds average cost, there will be a profit. This profit is a rent for the use of some scarce resource owned by the undertaking. For example, suppose that the road system can be extended only at rising marginal cost; then if the government based motor taxation on this marginal cost it would probably receive each year a sum well in excess of its expenditure on the roads. The difference is a rental for the use of existing roads, and is a very proper and necessary charge if road transport is not to develop beyond the economic point. In what follows it will be assumed that marginal cost is less than average cost, and that prices based on it cover the escapable but not the inescapable costs. The discussion follows the cost categories of Section I.5.

If there are inescapable expenses due to the fact that some assets do not have to be renewed, the undertaking will show a loss if price covers only escapable cost.

Take first the indivisible permanent assets, whose value outside the undertaking is less than their original cost. Some one has to bear the difference; why should it be the investors? The expenses were undertaken for the benefit of the consumers, and would not have been undertaken unless it was considered that the consumers were willing to pay enough to justify these resources being specialised to their use. There is no reason why the mere fact that the resources have now been specialised should throw the cost on the investors, or on anyone but those consumers for whose benefit the resources have been put into their present form. Non-renewable and renewable indivisible expenses should, in fact, be treated alike, in that they should be a charge on consumers' surplus, distributed over the consumers in whatever way will least reduce demand; the difference is that renewable indivisible expenses are escapable, and that while in their case the undertaking should be discontinued unless they can be fully used, in the case of non-renewable indivisible expenses the undertaking should go on even if what can be extracted from consumers' surplus is not enough to meet the original cost.

Consider next assets which are permanent but divisible, such as the cost of land for transport tracks. Whether they are escapable or not will depend on whether the industry is working to capacity. If it is working to capacity such expenses enter into marginal cost, and no loss is incurred. If it is working below capacity these expenses are uncovered. Part of the capacity is being used, and part is not, but price being equal to marginal cost, neither part is covered. That part which is in excess is due to mistaken investment on the part of the entrepreneur, and it is right that he should bear the loss. But

why should not the consumers pay for that part of the capacity which they use? Resources have had to be specialised to meet their convenience, and the fact of excess capacity should not throw the cost on to the investors. The proper course is to write off the cost of such part as is in excess, but to levy on consumers' surplus, according to what the traffic will bear, to cover as much of the original cost of what is used as can be covered. The difference between divisible renewable and divisible unrenewable assets is that the latter will continue to be used whether the levy on consumers' surplus is adequate to cover the cost or not, whereas the former enter into marginal cost.

Assets which are divisible and renewable, but some of which will not be renewed because of a contraction of demand, have already been dealt with. Price should cover the cost of renewal. The result, however, is that that part of the assets which is not to be renewed will earn no amortisation and will show a loss. The loss is due to mistaken foresight and it is right that the entrepreneur should bear it.

An undertaking may also show a loss or a profit because the cost of replacing its assets rises or falls. If replacement cost rises, escapable cost rises, and price rises above original cost. If replacement cost falls, price falls below original cost. These windfall profits and losses are due to mistaken foresight, and properly remain with the entrepreneur.

6. The net conclusion is that, at least in public utility undertakings and state industries, price should not fluctuate irregularly; should cover not only short-run but also long-run marginal cost; not only long-run marginal cost but also, preferably by way of price discrimination, escapable indivisible cost as well; and not only these, but as much of the cost of non-renewable assets as can be extracted from consumers' surplus by price discrimination (but only to the extent to which such assets are actually used). The only losses the undertaking should bear are losses due to mistaken foresight: where the entrepreneur has failed to estimate correctly the level of output, the amount of consumers' surplus available for unrenewable assets, or a change in replacement cost.

III. THE PRINCIPLES OF CO-ORDINATION

1. The first problem in co-ordination is one of terminology. There is an awful confusion in the voluminous literature on this subject because hardly any writers recognise the logical difference between the framework and the principles of co-ordination. It is possible to co-ordinate two industries by private agreement between the undertakings, by nationalisation, by free competition, by amalgamation, by legislation dividing the traffic, by licensing, or in other ways. No sound judgment can be passed on any of these schemes until one knows what is its purpose—what principles it will operate to secure the correct division of function between the two industries. The first thing to settle is the principle on which co-ordination should be based; discussion of the framework is subsidiary.

2. The economist's principle is escapable social cost; if two industries can perform the same service, one at a lower social cost than the other, the cheaper should perform it, unless the superior quality of the service offered by the other is worth more than the difference in cost—allowing, e.g., for differences of speed in transport, or in the quality of the space heating done by gas and by electricity.

Some proposals have been based on one or other of two other principles. One is that the revenues of established industries should be protected, so that they can pay interest on invested capital. In so far as this means that an industry must meet all escapable costs, divisible and indivisible, it is included in the economist's principle. But in practice it means more than this, and is the well known fallacy. This is the principle that has been applied in the restrictive licensing of road transport in this country.¹ The other principle is that it is better for industries to join together to exploit the market than to fight over it, e.g., that road and rail would do better to have a common rate classification which milked the high-valued traffics, and to share them on some arbitrary principle, than by quarrelling to let such traffics pass at low rates. This principle has seemed from time to time to be the one most likely to be adopted, but needs no discussion here.

There is, however, one objection to the escapable cost principle which is very widely held, and which deserves some attention. Some people consider that all the services performed by an industry should be taken as a whole, and that it does not matter if the separate parts pay, so long as the whole pays. According to this, some services should be performed at less than marginal cost, and subsidised from profits made on other services, and an industry which tries to do this may be handicapped if some other industry is allowed to charge only marginal cost for the profitable services which were being relied on for subsidy. There are many points in transport where this kind of policy is urged. For example, it is suggested that some traffics should be carried below marginal cost, or some classes of passengers; that profits should be made where the population is dense and used to provide transport facilities where it is sparse; that there should be flat rates not varying with distance, the short-distance traffic subsidising the very long; or that peak travellers should subsidise the off-peak. There are similar arguments for electricity and gas; e.g., that rates should be uniform throughout the country, with the odd difference that in electricity it is the off-peak consumer who is expected to provide the subsidy.

We have already seen that where there are indivisible elements in cost, not all services should contribute equally to total expenses; each should pay its marginal cost plus what it can afford. The proposals under discussion here are proposals for charging less than marginal cost.

¹ For detailed discussion of its application in decided cases see Ponsonby, G. J., "The New Conditions of Entry into the Road Haulage Business," *Economica*, May 1937; Chester, D. N., *Public Control of Road Passenger Transport*, Ch. XI; and Walker, G., *Road and Rail*, Ch. VII.

There are three objections. The first is that charging less than marginal cost in different areas distorts the economic factors which influence the distribution of the population. Population growth is stimulated in those regions at the expense of other regions. Part of the result is a gift to landlords and earners of quasi-rents, and to this extent the good intentions of those who make this sort of proposal are simply frustrated; but in so far as their intentions succeed, they distort the location pattern. Now it may be that the location pattern ought to be altered in these ways—broadly speaking that more people ought to be encouraged to live in places now sparsely populated, and *vice versa*. But it is doubtful whether transport and electricity authorities, acting separately, should be left to decide such matters. They do not necessarily take into account all that is relevant, and they may even pursue contradictory policies—the transport authorities may well be charging specially high rates to a region which is able to afford them only because the electricity authorities are charging specially low ones. The decision that some places are to be made more attractive and others less so is for the town and country planning authorities, and it is for them to say whether the penalties and attractions are to be subsidies to transport and electricity or something else.

The second objection is that if such subsidies are to be paid, it does not follow that they should be levied on other consumers of transport or electricity. It may be convenient to subsidise some users of transport by taxing others, but convenience is not the best principle of taxation.

The third objection is that this “over-all” sort of accounting makes difficult the control of the activities of such undertakings. If a manager is told that every service must cover its marginal cost, accounts can be devised which show whether it does or not, and his efficiency judged accordingly. If he is told only that he must cover all his costs it is more difficult to judge his efficiency, since he may be covering up gross errors in some parts of the undertaking simply by exploiting the consumers in some other part. This, in practice, should prove to be one of the most important principles in the administration of state enterprises—that each part of the enterprise must stand on its own feet. No business man would try to run a department store without separate accounts for each department, and the public’s problem of checking the efficiency of different parts of an undertaking is not less important.

Nevertheless, to hold that some services should be subsidised is not necessarily inconsistent with accepting cost as the correct principle for co-ordination, since the decision to subsidise still leaves open the question which of two industries should perform the service. If price is below marginal cost it is unlikely that co-ordination will in practice be based on marginal cost, but there is no theoretical difficulty; all that is required is that the different industries should be equally subsidised so that the difference between their prices should equal

the difference between their costs. Cost remains the only principle of co-ordination worthy of serious consideration.

3. Given acceptance of the cost principle, one may decide to put it into effect in more or less rough-and-ready ways. For example, if it is thought that costs are cheaper by rail for all traffics travelling more than 50 miles, or weighing more than 30 lb. per cubic foot, or requiring less than three changes of wagon if sent by rail, one may issue instructions based on one or more of these principles—in some countries this is the basis of the road-rail legislation. Obviously this is a very distant approach to the cost principle, and most traders in this country would feel that co-ordination here should get beyond such generalisations to more exact consideration of costs for each type of transaction.

4. The nearest approximation to the cost principle is to quote a price for each separate transaction, based on the cost of each separate transaction, and to use the services of whichever industry is cheaper. These prices may be actual or notional; that is to say, co-ordination may proceed by quoting real prices to the buyer, and letting him choose; or by reserving the choice to the management which then acts on the basis of its own calculations of which would be the cheaper. In practice in this country, for gas and electricity and for road and rail transport, the decision must be left to the buyer. In the case of gas and electricity, no one has ever contemplated leaving it to a fuel overseer to decide which each consumer must use. In the case of transport, some persons have suggested it, but the suggestion is not likely to be accepted. Traders' organisations have always insisted unanimously on freedom of choice between different forms of transport. Some advocates of nationalisation have thought otherwise, but not all; for instance, the Trades Union Congress in its recent report,¹ while paying lip service to managerial decision as an ultimate aim, provides for separate bodies to run road and rail transport, and not, as would otherwise be necessary, for a single manager to operate at each receiving point and decide which form of transport is to be used. Traders value the right to make their own choice because there are so many variables in the quality of transport service, and it is unlikely that any government will wish to force any other solution on them. Co-ordination must occur through the buyer choosing on the basis of prices which reflect costs.

Exact reflection, we have already seen, has its disadvantages, and they are likely to prove overwhelming. Prices will have to be based on long-run marginal costs rather than short-run; and they must not fluctuate irregularly. Gas and electricity prices already follow these precepts; road transport rates, however, do not and must be brought into line. Most people, including the traders, agree that there should be a codified road rates structure. Admittedly this is not easy to draw up, but it is not more difficult than the codification

¹ T.U.C., *The Public Operation of Transport*, 1945.

of railway rates, which has existed for more than fifty years. The main disagreement on this issue has been not whether there should be a code, but on the acceptance of cost as the correct principle for such a code.

We may now consider our two cases in greater detail.

5. The principal practical difficulty in co-ordinating gas and electricity on the cost principle is that presented by the daily peak. Here the electricity industry is the victim of its history. At its start, electricity was used mainly for lighting, and cheaper rates were offered, correctly based on long-run marginal cost, to stimulate consumption during the day for other purposes. These succeeded so well that in many undertakings the peak has shifted from the evening to the day.¹ Rates have not however been properly adjusted to take account of this change. This is partly because rates are sticky, partly because of the technical difficulty which used to exist (now more or less solved) of recording consumption according to the time of day, and partly because of the widespread adoption of the two-part tariff.

The two-part tariff has solid advantages; customer costs, which do not vary with consumption, can be put into the fixed charge, and so can the consumer's contribution to indivisible expenses, adjusted to his capacity to pay. Its great disadvantage, however, is that in encouraging customers to use as wide a range of electrical appliances as possible, it does not discriminate between those which come on to the peak and those which do not. The result, according to a recent calculation,² is that some of the more expensive forms of consumption barely cover their marginal cost, if that, and make no contribution to indivisible expenses. In the gas industry, which has not so acute a peak problem, as gas can be stored (though distribution costs are affected), the two-part tariff would not have this disadvantage, yet for historical reasons the two-part tariff is much less common here.

The electricity industry has a choice between three solutions. One is to have separate wiring of different types of consumption which occur at different times and are separately recorded. This is done in some cases, e.g., for large commercial water heaters charged only at night; but it would be too expensive to apply to the domestic consumer. The second alternative is to have meters which record peak and off-peak consumption separately. These are unpopular

¹ In some undertakings the position is uncertain and periods during which the peak may occur now cover a large part of the day. Cost allocation becomes a ticklish business when there is a shifting peak. A sub-committee of the Electrical Research Association has studied the problem in a report entitled, *An Improved Method for Allocating to Classes of Consumers the Demand Related Portion of the Standing cost of Electricity Supply*, 1945. The suggested solution is to allocate the full maximum demand charge to all loads whose maximum demand is known to coincide with the station peak, and to allocate to others by a formula taking both their maximum demands and their consumption during the potential peak period into account, on the theory that a load with a high load factor is likely to affect the peak more than a load with a low load factor.

² Report by the Fuel and Power Advisory Council, *Domestic Fuel Policy*, Cmd. 6762, 1946.

in the industry partly because of their cost (which would probably fall if they were demanded in large numbers), partly because of a sort of conservatism which accepts charging different prices for different uses but resists the idea of a price difference based on time, and partly because they might have to be complicated to meet the needs of undertakings whose peaks are imminently liable to shift in incidence. The third possibility, and the easiest to bring into effect, would be to vary the fixed charge according to the appliances used by the consumer, so that a man who used a fire would pay more than a man who used only lamps, and a man who had an electric cooker still more, the difference depending on the extent to which the appliance is likely to increase the size of the peak. The difficulty in applying this is the difficulty of checking the number of appliances the consumer is using and detecting secret appliances, but this is not so difficult as it sounds since it is possible to guess roughly from the consumption shown by the meter whether the consumer is likely to have more appliances than he admits to or not; this makes detection much easier than the Postmaster General's problem of detecting those who forget to buy a wireless licence.

6. In transport the principal problem in basing price on cost is the cost of the tracks.

If the cost of the tracks used by road and rail were independent of the traffic each carried, the solution would be simple; their costs would not be part of marginal cost, and should not enter into prices in such a way as to divert traffic from one to the other. The solution advocated by Brigadier-General Sir Osborne Mance¹ is of this kind; he proposes that the Government take over financial responsibility for railway tracks and roads, leaving road and rail to compete on the basis of other costs. The validity of this solution depends on the assumption that total track costs would not be affected if as a result some traffics were diverted from one system to the other. Now this is a question of fact to be determined by the government. General Mance first made this proposal for East Africa, where it is clearly arguable that the government would have to maintain both a railway and a road net the sizes of which would not be much affected by any likely traffic changes in the near future. In this country the best reasons for considering that the position may be similar are the argument that the size of the road system is determined mainly by the number of private cars travelling on bank holidays, and that the number of commercial vehicles, which are more closely competitive with the railways, has little effect on road costs; and the military case for maintaining larger road and rail networks than are required in peace time. If these arguments add up to the conclusion that expenditure on road and rail tracks is largely independent of competition between road and rail, then it ought certainly not to be taken into account in that competition.

¹ Mance, H. O., *The Road and Rail Transport Problem*, 1940.

This decision has to be made by those who know the relevant facts, in this case the government. In countries where it is decided that track expenditure depends on whether traffic goes by road or by rail, such expenditure is part of the marginal costs of traffic, and should be reflected in prices.¹ This is where non-renewable expenditure presents difficulty. To extend their facilities, both road and rail have to purchase land and put it into suitable form for tracks. This expense is a part of marginal cost, so long as the system is not working below capacity. A great battle has raged over the issue whether road transport should pay enough to cover the interest on all past investment of this kind. The railways are expected to pay such interest, if they can, and claim that it is unfair that road transport should get a "legacy from the past" which they cannot share. Their contention would be the nonsense which economists have usually asserted it to be if there were excess capacity in roads as there is in railways. But there is not. Every extension of the road system involves heavy expenditure on land and conversion, and the charge made to road transport should be at a rate which covers this. If it is at such a rate we can be pretty sure that it will be adequate to pay interest on the entire network of roads, assuming constant marginal cost, and much more than this if we assume that extending the road network takes place at rising marginal cost. Some economists have argued that road transport ought to pay only a sum equal to the annual expenditure on the roads, but this is not so. Given constant marginal cost, road transport ought to pay on existing roads not only their maintenance but also interest, and given rising marginal cost it should pay also a rent. The railways have reached what is probably a true conclusion via an invalid argument.

Let us suppose, however, that it is not the case that there are rising marginal costs in extending the road net, and that to charge marginal cost would leave an indivisible cost uncovered. The indivisible expenditure is divided into the escapable (renewable) and the in-escapable (which is not shown in current road finance, but for which items appear in railway accounts). Each system must cover its escapable indivisible expenditure separately, out of consumers' surplus. Since the traffics in which each system is superior will be different, those goods which make a high contribution to the indivisible costs of the railway will make none to road costs and *vice versa*. Each system will have a rates structure, but these structures will not be similar, as is so often proposed, but opposites. The high-rated traffics of road transport will be the low-rated traffics of the railway, and *vice versa*.

¹ Most of the proposals for "putting roads and rail on an equal basis in respect of track costs" violate this principle. Such are: (a) that the government should meet the cost of all tracks out of taxation; (b) that the government should own all tracks and charge vehicles, whether road or rail, the same ton-mile rate for use of the tracks; (c) that road transport should pay in taxes a total sum equal to the cost of railway tracks. Equality of charge is economic only if there is equality of cost.

Assuming that the government owns the road (or the railway track) but not the vehicle, how should it charge the users of the track? That part of the cost of the road which varies with use should enter into marginal cost. This happens automatically if it is levied as a tax on petrol (or coal) or some other index or record of vehicle miles run.¹ To some extent, however, cost varies with the number of vehicles rather than the miles they run, because the roads have to be wide and numerous enough to take the maximum number of vehicles wanting to run, and on bank holidays they are nearly all out; to this extent the tax should be on the vehicle, irrespective of mileage. Theoretically one should separate out these two sources of variation in costs, as the electric undertakings separate out standing from running costs, and set the fixed and variable taxes accordingly; but in practice exact division is probably not very important.

The escapable indivisible part of the track cost is more difficult. This must not enter into marginal cost, and should therefore definitely not be recovered by a tax on fuel or on the vehicle. The correct solution is that when rates are being fixed a sum should be added to all rates that can bear it, in so far as they can; carriers (including persons carrying on their own account) should then make regular declarations of what they have carried, and pay the appropriate tolls—just as cinemas collect and pay over entertainment duty. (This filling of a large gap in our statistics of transport would in any case be very valuable). There would doubtless be some attempts to defraud, but if the ultimate penalty were loss of licence, evasion would probably not be very great. In any case, the problem arises only to the extent to which transport remains in private ownership. In a nationalised transport system, the appropriate tolls would be added to prices and the rest would be mere book work. (It should be remembered that we are assuming that marginal cost of the track is less than average cost: if it is not, none of this arises as the indivisible expenses are covered simply by charging marginal cost.)

There remain the inescapable costs to which the owners of the track are entitled in so far as they can get them from the users. Strictly, each system should be treated separately, the railway getting what it can from its traffics, and road authorities the same. General Mance, who believes that more or less all railway and road track expenses are inescapable, has suggested that they should be pooled, so that in effect goods going by rail might contribute towards the maintenance of roads, and *vice versa*. If railway traffics cannot yield from their consumers' surplus enough to cover inescapable expenses, the loss has to be borne somewhere. At present the shareholders bear it; and if the government owned the tracks and found itself in a similar

¹ There are crucial problems here in deciding which classes of vehicle do most damage; see Ministry of Transport (Salter), *Report of the Conference on Road and Rail Transport*, 1932.

position, the government would bear it for railways as it does for roads (no interest charge is recorded on past investments in roads). If the government has to bear a loss, it will levy taxes on the community. There is no obvious reason why it should levy specially on traffic going by one system to meet losses on another; this might or might not prove the most convenient source of revenue, but convenience is only one of the canons of taxation.

One of the difficult problems is the difference between different tracks. Not only are some roads less expensive to build than others per mile, but the density of traffic varies from one to another, and if rates were the same some would make profits and others losses. The railway companies get over this by charging exceptional rates on routes with high traffic density, and the co-existence side by side of two competing systems, road and rail, applying different principles, must have caused some uneconomic diversion of traffic in the past. A nationalised road transport industry could be brought into line with railway practice, its ton-mile rates varying with traffic densities on the routes to be used. But the problem is soluble even if road transport is not nationalised, on lines already suggested. If road rates are codified, the rate including a toll to be paid over to the government at regular intervals, the amount of the toll can be adjusted to traffic density, traffics passing between some places paying lower tolls than others. A road rates code would in any case have to take account of density, back loads, and the other matters which distinguish one route from another, so this would not be a new principle. However, a government seeking to avoid complications might decide that the simplest thing was to have a uniform rate throughout the country. If it did, co-ordination of road and rail would be upset unless the railways were put on the same basis. From the point of view of co-ordination it does not matter much which basis is adopted; what matters is that road and rail tracks should both be paid for on the same principles.

It will be obvious that the co-ordination of road and rail on the basis of cost is no simple matter. All the work of determining in actual figures what part of track costs varies with traffic, and what part is indivisible but escapable, remains to be done, also the task of allocating these costs properly to traffics on the basis of what they will bear, taking into account the limits set to each system's charge by the marginal cost of the other. The calculations involved may lead some to conclude that it would be too costly to try to co-ordinate on the basis of cost, but once it is recognised that at best only broad approximations will be possible, the work can be kept within reasonable limits, especially as it is the initial allocations that are difficult, and the year-to-year changes are small. Only the government possesses the information on which to base the allocations; all that outsiders can do is to set out what seem to be the logical categories.

IV. THE FRAMEWORK OF CO-ORDINATION

1. The principle that co-ordination should be based on cost is independent of the framework adopted to secure co-ordination. In this country four methods have been considered, (1) free price competition, (2) restrictive licensing, (3) private agreement, and (4) amalgamation, including nationalisation.

2. The first problem which free competition presents is co-ordination in the building of road and rail tracks. We have seen, in section II, 4, that, given two industries with indivisibilities, price competition between them can secure proper co-ordination. If, however, the facilities are not given, or questions of extending them arise, competition between indivisible elements does not work smoothly. If, for example, a railway company is contemplating laying a new track, whether this should be done or not will depend to some extent on whether the road authorities propose to build parallel and/or feeder roads. Such uncertainties hold up development; they have, for instance, been one of the obstacles to the electrification of the railways. If the sums of money involved were small, and development could proceed a little at a time, the competitive process would adjust the facilities provided by competing industries. But where the sums are so large and indivisible, under-development through uncertainty on the one hand, or over-development through ignorance of rival proposals on the other, can best be avoided by consultation. The network of railway tracks and of roads should be planned as a whole, following the principle elucidated in Section II, 4, that both should be provided, in competition with each other, where with price discrimination both would pay, but that only one should be provided if only one by itself would pay.

Now the present situation in this country is particularly anomalous because, not only are road authorities separate from the railway track authorities, but roads are provided in competition with railway tracks without the authorities having to consider whether these roads earn their cost or not. Road and rail track building should clearly be done at least in consultation; and would probably be done best if there were a single authority, i.e., if the government nationalised the railway tracks and planned road and rail tracks together. Nationalisation of railway vehicles and operation does not, of course, follow from the nationalisation of the tracks, and it has often been proposed that the one should be done without the other. In what follows we shall assume that road and rail tracks are commonly owned by the government, which charges rail and road vehicle operators for their use. What we shall discuss is the co-ordination of the service provided by such operators, in terms of the choice between free competition, licensing, and amalgamation, including nationalisation.

3. Free price competition could secure a very precise co-ordination, based on hour-to-hour changes in cost. To achieve it, road and rail

would have to be placed on an equal footing ; the railways relieved of their obligations to carry and given freedom to vary their rates at will, and road transport freed from restrictive licensing. This is generally admitted. What has not been generally accepted, although the railways have always pressed the point strongly, is that it would involve a revolution in the treatment of road costs, both in deciding what was to be levied, and in deciding how it was to be levied, and to the extent to which there may be escapable indivisible elements in road costs it would require road rates to be put on to a what-the-traffic-would-bear basis. In the light of all this, no one can pretend that the competition between road and rail in pre-war years was either fair or based on cost, or that the resulting traffic diversions were not to some extent uneconomic in the social sense. However, given the necessary adjustments, free price competition based on cost could certainly achieve a proper co-ordination.

The disadvantages we have already seen. Since rates would be based not on long-run but on short-run marginal cost, the railways, which suffer from excess capacity, would have difficulty in earning amortisation quotas on that part of their investment which requires renewal, though perhaps this would not be so great a problem if the tracks were disintegrated, since the excess capacity lies there rather than in railway operation. In any case, rates would fluctuate freely from hour to hour, and there would be opportunities for personal discrimination. There are not many persons who feel that the advantage of full hour-to-hour utilisation of resources is great enough to outweigh these disadvantages.

A more limited competition would be possible if both road and rail had their rates fixed by a tribunal on the basis of long-run escapable cost, ironing out fluctuations. It would then be necessary to prevent departures from these rates, and to impose common carrier obligations on both. Charging less than the minimum would be difficult to detect, but could be controlled by making the ultimate penalty forfeiture of licence ; no great difficulty seems to be expected in enforcing the minimum road rates now widely proposed.

4. Restrictive licensing does not make any clear contribution towards co-ordination on the basis of cost. For it to be helpful, one must be able to assume that the cost situation demands that there should be fewer road vehicles, and to hope that those which are licensed will concentrate on the traffics where their marginal costs really are lower than the marginal costs of rail transport. The latter effect will be attained only if road and rail rates correctly reflect the respective costs, and if it is possible for them to do this there is no need for restrictive licensing. In practice there is no pretence in this country that the licensing of road vehicles is based on cost ; the avowed object of the Commissioners is to protect the revenues of existing undertakings.

Restrictive licensing of public contractors but not of traders carrying on their own account, and of public passenger vehicles but not of

private cars, is obviously uneconomic. It has led to a great expansion of private transport at the expense of public transport, though the latter is more economic. All road transport should be restricted or none. Moreover, if the number of vehicles is restricted below the profitable number, those who get licences are given a semi-monopolistic position which at once reflects itself in the licence acquiring a money value. Why should this gift be presented to operators? If licences are to be restricted they should be sold. But exactly the same results would be achieved by increasing the level of road taxation. The basic problem in co-ordination is to make road taxation reflect road costs, and if this is done restrictive licensing is unnecessary.

5. Road and rail interests could by private agreement create and maintain rate structures which were based on cost principles. Agreement has been reached on having a road rates structure, but there is no evidence that it is to be based on cost. The interest of the railways is to protect their revenues, and the joint interest of road and rail is to adopt a common classification which enables both to milk the most profitable traffics, sharing the proceeds on some agreed basis. As we have seen, road and rail rates structures should be opposites, in the sense that the goods profitable to the one should be unprofitable to the other; no other structure achieves co-ordination on a cost basis.

6. Some amalgamation has taken place through railway purchase of road undertakings, but the process is likely to be completed by the nationalisation of road and rail transport which has now been announced.

It is not proposed, and is not likely, that road and rail will be fused in the sense that at each point of contact with the public one man will be responsible for both. Separate organisations will be maintained, fusing only at the top. The choice between road and rail will therefore be left to the public. There may be crude attempts to confine it by regulations requiring some traffics to go by rail, e.g., long distance or heavy traffics, but no such crude approximation to cost is either necessary, or a necessary part of nationalisation. There is no reason why the nationalised undertakings should not fix their prices to reflect costs and just let the public make its own choice.

The danger of a nationalised service is its inheritance. It is partly that the government inherits twenty years of legislation hostile to road transport and a "Whitehall climate" that demands the protection of railway revenues. It is still more the fact that the government is almost certain to have to pay for the railways more than the railways will be able to earn unless they are bolstered up by restricting road transport. The reason for this is that it is hardly practicable politically to pay the shareholders a smaller annual sum than that which they have been paid throughout the war years. That sum, if pre-war years remain a good guide, exceeds what they could earn when road transport was restricted; if road transport were freed from restrictive licensing,

as it ought to be, railway earnings would be still smaller; though putting road taxation on to a proper basis might on the other hand prove to be a factor in their favour. A government under an obligation to make its railway accounts balance would probably be foolish enough to restrict other forms of transport. This must have wide repercussions. If publicly owned road transport is restricted, either in quantity or by charging prices exceeding costs, the citizens will operate vehicles on their own account under "C" licence, and we shall see continued that uneconomic expansion of traders' transport at the expense of public transport which the licensing system produced before the war. This will threaten the nationalised system, reducing its traffic and profits, and sooner or later the government will find itself wanting to place restrictions on the right of traders to carry for themselves.

The way out of this is to begin by writing off boldly the excess of the amount which has to be paid to the railway shareholders, so that the nationalised service may start without that burden of over-capitalisation which the L.P.T.B. has to carry. Put on to the books of the new undertaking no more than it can be expected to meet, on its own merits. That would leave the government free to deal with road transport on its own merits. Most of the apparent case for nationalisation of road transport would vanish. The case for nationalising the railways is presumably that there are notable economies of scale, and that such large concentrations of economic power should be under full public control (though these economies are associated with the tracks rather than with vehicle operation; if the tracks are nationalised there may even be a case for more regional disintegration of vehicle operation, whether this also is nationalised or not). No such argument applies to road transport, and nationalising road transport may merely impart a bureaucratic inefficiency to an industry that might remain more flexible if left to operate on a small scale. The best case for nationalising road transport is that if the railways are nationalised at too high a price, they can be made to pay only by restricting road transport. This best case is a bad one anyway; and would disappear if the water in the price to be paid for the railways were written off immediately.

Objectives and Methods of Exchange Control in the United Kingdom during the War and Post-War Transition

By F. RONA

I. INTRODUCTION

THE thorny plant of exchange control regulations is not a native of the British Isles. The area of its origin lies rather in Central Europe, where it developed in several countries to an exuberant herb after the first world war and—while disappearing temporarily during the period of “borrowed prosperity” in the middle of the ’twenties—then spread all over the world during the depression of the ’thirties.

Exchange control, in the strict sense of the term, always implied the direct intervention of a State, either under the direction of a Ministry for Finance and Trade or of *ad hoc* established authorities, in domestic markets for foreign currencies. The scope of regulations included, to a greatly varying degree, payments to and from foreign countries and transactions of foreign trade. The usefulness and effects of restrictions on foreign exchange transactions have been hotly disputed by economists and financial experts. It may be illustrative to quote a resolution of the Brussels Financial Conference of 1920:—

“Attempts to limit fluctuations in exchange by imposing artificial control on exchange operations are futile and mischievous. In so far as they are effective they do not accurately reflect the real conditions of the market and tend to remove natural correctives to such fluctuations . . . Moreover, all Government interference with trade, including exchange, tends to impede that improvement of the economic conditions of a country by which alone a healthy and stable exchange can be secured.”¹

In spite of the opposition of economists in Western European countries, comprehensive, but frequently modified, systems of exchange control were maintained in numerous Central European countries, e.g., Austria, Germany, Czechoslovakia, Hungary, etc., during the period of monetary disintegration, inflation, and currency depreciation in the early 1920's. In connection with the currency stabilisation in these countries, generally carried out with the help of substantial foreign loans, the respective central banks obtained adequate *devisen*² and gold reserves which made possible a considerable relaxation and even complete abolition of restrictions on foreign exchange transactions.

¹ U.S.A. (Congress), *Foreign Currency Investig.*, 1925, Vol. I, p. 13.

² The term “*devisen*”, suggested by Prof. H. E. Ellis in *Exchange Control in Central Europe*, p. 1, is used as shorter equivalent for foreign bills of exchange and foreign currency balances abroad.

After the failure of the Credit-Anstalt in Vienna in May, 1931, causing a widespread financial and banking crisis, the Governments of the countries affected by an extensive conversion of domestic currencies into devisen—owing to capital flight and withdrawals of short-term and mobile foreign capital—abandoned their “laissez faire” attitude and reluctantly, but resolutely, reintroduced and later tightened exchange control measures. The repercussions of the crisis affected also the London Money Market, and—after the outflow of about £200 Mn. of foreign gold holdings during the summer, 1931—the Treasury announced on September 20th, 1931, that on the next day the provision of the Gold Standard Act of 1925 (Sub-section 2 of Section I), according to which the Bank of England was required to sell gold at a fixed price, would be suspended. In accordance with a new permissive Act, passed on September 21st, 1931, the Treasury issued the following Order :—

“ Until further notice purchases of foreign exchange or transfer of funds with the object of *acquiring* such exchange directly or indirectly by British subjects or persons *resident* in the United Kingdom shall be *prohibited*, except for the purpose of financing: (1) normal trading requirements; (2) contracts existing before September 21st, 1931; (3) reasonable travelling or other personal purposes.”¹

This type of exchange control, therefore, did not prevent the financing of imports and “current transactions” but had as sole aim the checking of “bear speculation” against sterling and a “flight” of capital owned by residents. The confidence of the public in sterling rendered this restriction unnecessary. Consequently, the above regulation was rescinded on March 2nd, 1932, and the freedom in dealings on the London foreign exchange market was completely restored.

In several Central European and South American countries, however, the sphere of exchange control measures extended to all kinds of foreign exchange transactions. Various restrictions on capital transfer and on the conversion of a domestic currency into foreign currencies were introduced, originally with the purpose of checking undesirable capital movements and improving a country's Balance of Payments. The different regulations did not always attain the desired objectives. As the League of Nations' *Report on Exchange Control* (1938, p. 25) pointed out, the value of introducing exchange control depended to a large extent on the condition whether the moment of its imposition was prior to a massive withdrawal of foreign credits and the “flight” of large amounts of domestic capital. An improvement of the Balance of Trade, supposing other items of the Balance of Payments to remain relatively unchanged, could only be achieved if the export trade

¹ *Survey of Internat. Affairs, 1931* (Chatham House), p. 224.

was not more adversely affected than imports by the consequences of exchange control.

Whereas exchange control was usually justified by the necessity of preventing irregular capital movements and a depreciation of the domestic currency, in the course of its maintenance supplementary aims of trade policy were frequently added to the initial purpose of the control; such as improvement of the terms of trade, protection of domestic production, etc. Exchange control could also be adapted and used as a powerful weapon of totalitarian economic and political control,¹ as shown by the Nazi system, for the regulation of all items in the Balance of Payments.

II. THE CONCEPT OF EXCHANGE CONTROL DURING THE WAR

Exchange control systems in peace-time, in short, were characterised by the following measures: (a) *exchange rates* were influenced or determined by the authorities; (b) *dealings* in foreign currencies were, to a varying degree, subject to official regulations; (c) the *movement of capital*—including security holdings and various kinds of payments to and from other countries—was subject to restrictions; (d) *assets of residents* which could be realised abroad and assets of *non-residents* in the controlled country were, to a varying degree, subject to limitations on ownership and use; (e) *exports* and *imports*—apart from other possible restrictions on foreign trade, e.g., quotas, licensing, etc.—were to a varying extent controlled by the authorities.

During the war exchange control became an effective requisite of economic warfare, and, as a part of the system of controls, an important factor of war-time economy. The exchange regulations had positive and negative objectives: viz., to support purposes essential to the winning of war and to prevent transactions which might be disadvantageous to or unnecessary for the war effort. The basic principle of all economic regimentation during the war was the maximisation of production for war and the mobilisation of all economic resources to this end.

Germany's financial and economic organisation had already been adapted in the pre-1939 years to war-time needs, and the transition to war-time activity brought little innovation. In the United Kingdom the conditions were basically different and the government had to introduce economic regimentation *ab initio* and in stages.

With regard to exchange regulations the first two of the above-mentioned five problems could easily be solved. At the outbreak of the war the government of the U.K. suspended the free market for gold and fixed the price for one oz. of fine gold at 168 shillings, increased to 172s. 3d. on June 11th, 1945. By pegging the value of sterling to the dollar, at the rate of £1 = \$4.03, which worked to mutual satisfaction in both the U.K. and U.S.A., the external

¹ Prof. Ellis, *op. cit.*, p. 299.

value of the currency was stabilised. The other exchange rates were fixed, and have been since maintained, with certain exceptions, on the basis of this parity.

The second problem, the centralisation of dealings in devisen and foreign currencies in general, was solved at the beginning of September, 1939, by the appointment of 25 British and Irish banks as "authorised dealers" in all currencies (gradually increased to 78, partly foreign) and about 70 (partly foreign) banks in certain foreign currencies only.¹ In consequence of this arrangement and through the co-operation of these banks the Bank of England was able to supervise the different sorts and the volume of foreign exchange transactions. On the basis of the Emergency Powers (Defence) Acts of 1939 and 1940, and under the guidance of the Treasury, the Bank of England was empowered to issue regulations (F.E.-Notices to Banks and Bankers) relative to the conversion of sterling into other currencies (application for purchase on E.-Forms) and to the transfer of sterling abroad and to non-residents (application on E.I-Forms) as well as concerning all business in connection with foreign exchange transactions.

There has been no restriction on capital movements or sterling transfers for account of "residents" *within* the sterling area; i.e., to a person (irrespective of nationality) or a company resident in the British Empire (except Canada and Newfoundland) and mandated territories, or in Egypt, Sudan and Iraq. This territorial definition of the "sterling area", first given on January 8th, 1940, has subsequently been changed several times, as in the following years various additional countries, such as the Belgian Congo, free French territories, Iran, Iceland, etc., were temporarily considered to form part of that area. The British Exchange Control system is based on this distinction of residence inside or outside the sterling area and, consequently, payments and capital transfers to "non-residents" have been and are subject to restrictions.

Defence regulations concerning the prevention of trading with the enemy lie outside the scope of exchange control proper, and assets of "non-resident" enemy subjects and later of citizens of countries which came under enemy occupation have been administered by the Custodian of Enemy Property (Trading with the Enemy Department of the Board of Trade) in virtue of the Trading with the Enemy Act of 1939.

The mobilisation of British-owned foreign assets began immediately after the declaration of war. In accordance with the Defence (Finance) Regulations the Treasury was authorised to acquire all private holdings of gold coins, bullion, and certain "hard" currencies. Originally nine so-called "specified currencies" (e.g., U.S. dollars, Canadian dollars, French and Swiss francs, Argentine pesos, etc.) had to be offered to the Treasury but subsequently other currencies were added to this list. Residents could maintain foreign currency accounts

¹ *Bankers' Almanac*, 1945-46, p. 2,157.

with banks in the U.K. or abroad only with permission of the Bank of England. The requisitioned amounts, however, were insufficient to cover both the purchase of vital war supplies abroad and the withdrawal of funds held by non-residents with British banks. Apart from reductions in other currency holdings, the gold and U.S. dollar reserves of the Treasury fell from £605 million on August 31st, 1939, to £74 million on December 31st, 1940, and to £3 million¹ just after the passage of the Lend and Lease Act, in April, 1941, after which date the position improved considerably. Official operations in gold and devisen were carried out by the Bank of England, acting as agent of the Treasury, and also for account of the Exchange Equalisation Fund.

Soon after the outbreak of the war the Treasury required the compulsory registration by "residents" of all marketable U.S.A. and Canadian securities, as well as of other specified securities. A large part of these security holdings were delivered to and held in the United Kingdom Security Deposit in Montreal. During the second half of 1940 and in 1941 securities "called up" were compulsorily purchased from their owners at market prices under "Acquisition Orders" of the Treasury. In order to prevent the sale of large blocks from depressing prices, the British government offered a part of the requisitioned U.S. securities and certain interests of British subjects in U.S. enterprises as collateral for a loan from the Reconstruction Finance Corporation (\$500 million ca.). The total of British-owned assets sold or repatriated to the U.S.A. during the war amounted to £203 million (excluding the R.F.C. loan) and to Canada £225 million.² At the same time even larger amounts of U.K.-owned overseas investments were repatriated within the sterling area, chiefly to India and the Middle East: £348 million; to Dominions and other Sterling Area countries: £216 million; and to the rest of the world: £126 million.

The main objectives of the war-time regulation of commercial exports (i.e., excluding exports for military purposes and contributions to the war effort of Allied Powers) were the use of their proceeds for the strengthening of foreign exchange reserves and the preservation of established trading relations with certain countries. In March, 1940, Defence (Finance) Regulations were issued to authorised dealers concerning the sale of currency proceeds of certain exported goods (tin, rubber, jute, whisky and furs). Customs Officers in the U.K. had to check the customs declarations (C.D.1-Form) of exporters, which also indicated the method of payment and the transfer of payment (by a sterling bill, draft or bank transfer, etc., or by sale of one of the listed currencies) and had to be confirmed by the exporters' banks in the U.K. This system of controlling exports was subsequently extended to all exported goods (C.D.3-Form). Apart from foreign exchange regulations, all exports of goods had to be licensed by the

¹ *Statistical Material for U.S.A. Loan Negotiations*, Command Paper (Cmd.) 6707, p. 11.

² *Ibid.*, p. 9.

Board of Trade or the Ministry of Supply, which could control the volume and direction of exports and allocate the available shipping space. Although large exports of certain commodities to the U.S.A., South America, and several other countries were encouraged in the first years of war, prior to the Lend and Lease Agreement, the volume and value of commercial exports declined steadily, from £471 million in 1938 to £411 million in 1940, and reached the lowest figure, £233 million, in 1943. The number of workers employed in export industries fell from 1.3 million to 0.3 million between mid-1939 and mid-1944.

While the supply of foreign currencies from exports was diminishing, the demand for devisen, necessary for the payment of certain imports, could not be reduced proportionately. Restrictions on private imports had to be imposed not only in view of the scarcity of foreign currencies, but also because of the shortage of available shipping space. All private imports required *licences* which were granted according to a scale of priorities based upon the necessity and urgency of the goods to be brought in. The statistical material concerning the composition of war-time imports has been published by the Statistical Office of the Customs and Excise Department¹ for the years 1940-1944. (Retained imports: food and drink = £2,265 million; raw materials = £1,325 million; manufactured goods = £1,862 million, exclusive of munitions—totals for five years.)

In order to facilitate the administrative work of the Bank of England, 70 banks (this increased number was authorised on January 8th, 1940) were permitted to approve, once an import licence had been obtained and Customs Entry Forms, etc., submitted for inspection, the payment in sterling to a "non-resident" in settlement of imports into the U.K. without limit, and up to £5,000 for imports into other sterling area countries. If payment in a foreign currency was necessary, it could be purchased from the Bank of England.

A particular feature of the British Exchange Control system has been the *pooling* of foreign exchange resources within the *whole* sterling area. Countries of the sterling area agreed in 1939 that in consideration of London's position as a commercial and financial centre for the sterling area the "central pool" of dollars and other "hard" currencies should be administered here. Consequently, foreign currencies received in payment for exports, visible and invisible, were paid by the sterling area countries into the pool, in exchange for sterling balances in London. The drawings on the "central pool", for payments for imports into sterling area countries and their other requirements, involved the opposite kind of transaction: foreign currencies were paid out against the receipt of sterling. The limits of drawings by member countries were fixed by mutual agreement. The "central pooling" system contributed appreciably to the efficiency of British Exchange Control. It meant that the problem of an adverse Balance of Payments for Great Britain alone became less important during

¹ London: H. M. Stationery Office, *Trade of the U.K., 1940-44*, Vol. IV, pp. 307, 332.

the war, because the whole sterling area shouldered the common burden of providing scarce currencies.

III. DEVELOPMENT OF EXCHANGE CONTROL SINCE 1939—CURRENT TRANSACTIONS AND CAPITAL TRANSFERS

After having considered the general principles of exchange control in Great Britain we may now proceed to some significant technical details with regard to payments and possibilities of transfers of funds to countries outside the sterling area. There were two categories of transfers in this connection: (a) payments of "residents" to "non-residents" and (b) withdrawals of liquid and capital investment assets by non-residents from the sterling area or the use of those assets for payments and investments within the sterling area.

In consequence of a differential treatment of foreign accounts a complex system of regulations developed in respect of sterling accounts of *non-residents*. The conversion of sterling into foreign currencies, owing to the monopolisation of transactions in foreign exchanges by "authorised dealers" (Regul. No. 2), is only possible by the Bank of England's sale, for approved purposes, of devisen and/or notes. Transfers of sterling from one foreign account to another, of the same country, could and can be effected in certain cases without special permission or formalities.

In the first months of the war non-residents could transfer their sterling balances abroad, or sell their securities here and withdraw the proceeds obtained. Consequently, a "free market" in sterling sprang up in the U.S.A., Switzerland and other countries where the value of sterling underwent appreciable fluctuations and remained much below the official rate of £1 = \$4.03. This development entailed disadvantages for British exports, because foreign importers could pay with sterling bought cheaply in the "free market".

In order to improve and normalise the position, three new types of foreign accounts were introduced in June and July, 1940: (a) Special Accounts, (b) Registered Accounts, and (c) Sterling Area Accounts.

The first monetary agreement in connection with the creation of "*special accounts*" was negotiated with Denmark, just before Germany's attack in April, 1940, and within one year agreements were concluded with 15 other countries, e.g., Argentina, Roumania (later "Enemy Account"), Brazil, Sweden, Portugal, Chile, Turkey, etc. The main principle for the conclusion of these bilateral ("special") payments agreements was that all sterling payments for imports to the U.K. and all other amounts to be transferred from "residents" had to be paid into "special accounts". On the other side, foreign importers paid, for exports from the sterling area, in the currency of their respective countries into "special accounts" kept abroad. In this way the use of "free sterling" in payment for British exports was prevented, the significance of the "free market" for sterling diminished rapidly, and foreign importers had to pay in their own currencies instead.

The payments agreements also fixed the rates at which sterling could be converted into foreign currencies. Transfers of amounts from one "special account" to another of the *same* country were free, but "arbitrage" transactions, in the form of exchanging one currency against another, were prevented by not allowing without permission payments into a "special account" of a resident in another country. As the Bank of England required monthly statements of balances on "special accounts" from the banks, changes in foreign sterling holdings on these accounts could be supervised. The opening of this type of account was and is subject to the consent of the Bank of England. In the case of some countries (e.g., Sweden) "special accounts" could be opened for banks and individuals resident there, and previously obtained sterling balances could also be transferred with the permission of the Bank of England. In other cases (e.g., Roumania) "special accounts" were conducted only at the Bank of England and the central banks of the countries concerned; and importers in Great Britain or abroad had to make their payments into these accounts, which thus assumed the character of pure "exchange clearing" accounts. Payments from "special accounts" to residents in any country of the sterling area were and are permitted without restriction. Balances on "special accounts" here and abroad are not necessarily offset against each other.

The introduction of "registered accounts" for U.S.A. and Swiss residents, on July 18th, 1940, signified a further step towards "bilateralism" and discrimination between residents of different countries. Amounts credited to these accounts, usually representing, in Great Britain, payments for imports and sales of dollars and Swiss francs, could not only be used for every kind of payment within the sterling area but also withdrawn and converted into dollars or Swiss francs respectively. The Bank of England's consent was necessary for opening of such accounts, each of which obtained a register number; hence their denotation.

At that time purchases for Great Britain in the U.S.A., in accordance with the "cash and carry" system of neutrality legislation, could not be made on credit. By introducing "registered accounts", instead of a special "payments agreement", a satisfactory method of settlement of payments to the U.S.A. was found which could be regarded as substitution for purchase on credit. The same advantageous arrangement was accorded to Switzerland. Originally this type of account could be maintained only for banks resident in the U.S.A. and Switzerland, but about one year after the attack on Pearl Harbour, in January, 1943, the Bank of England agreed to the opening of "registered accounts" in the name of firms and individuals resident in the U.S.A. Swiss firms, but not individuals, also obtained permission for maintaining such accounts.

On the 2nd February, 1943, all U.S.A. "sterling balances", i.e., "old" accounts, "registered" accounts, and "sterling area"

accounts, which will be described later, were unified and redesignated as "U.S. Registered Accounts"; thus the latter became the only type of sterling accounts in the U.K. for the U.S.A.

The arrangements for payments to Canada, which remained outside the sterling area owing to its close economic connections with the U.S.A., did not constitute a major problem. For residents in Canada—banks, firms and individuals—the so-called "authorised accounts" were maintained, from which all kinds of payments could be made within the sterling area. Sterling balances on "authorised accounts" could and can be withdrawn and converted into Canadian dollars. Canada's gift of £225 million to Great Britain in 1942 provided cover for the greater part of the sterling debts accumulated in London in favour of Canada.

In May, 1941, a new type of account—called "Central-American Account"—was introduced for the twelve republics around the Caribbean Sea. These accounts were endowed with the same advantages as the "registered accounts", i.e., credit balances could be freely used for any payments within the sterling area, including those for British exports, and could be withdrawn through transfers to Central American banks. Payments into "Central-American Accounts", however, were subject to restrictions and sterling could be acquired by the account-holders—banks, firms and individuals—only by imports into the sterling area, sales of U.S. dollars or special permission of the Bank of England. Subsequently, the Bank's approval was required for opening of new "Central American Accounts", to which previously obtained sterling balances—so-called "old sterling accounts"—could be transferred. In July, 1945, all "Central-American" and "U.S. Registered Accounts" were lumped together and redesignated "American Accounts"; thus one single area for settlement of current transactions was established for the U.S.A. and the 12 Central American countries.

Alongside the principle of geographical differentiation, which has split up the world, for exchange control purposes, into numerous "closed clearing areas" for sterling transfers, another principle, concerning payments of certain claims by non-residents as well as debt service and sale of foreign-owned security holdings, rendered the exchange control system in Great Britain more complicated. The essential instructions, how certain income items could be made available to non-residents, were contained in the Notice of the Bank of England to banks on July 18th, 1940. This Regulation provided for the establishment of "*sterling area accounts*" for individuals residing in "special" and "registered account" countries and allowed, without reference to the Bank of England, the crediting of income items, such as salaries, pensions, rents, interests and dividends, received within the sterling area in favour of the account holder. Amounts credited to "*sterling area*" accounts could be used for meeting certain personal requirements of the account holder (e.g., for payments

to dependants within the sterling area, insurance premiums, charitable donations, etc.) but other types of payments were subject to the approval of the Bank of England.

In May, 1942, the remittance of interest and dividends was permitted to the U.S.A. and Switzerland without formality. At the same time limitations on the use of credit balances on other "sterling area accounts" (maintained for residents in "special account" countries, e.g., Brazil, Argentine, Portugal, etc.) were substantially relaxed, and also transfers to the account holder allowed, through the medium of a bank in the respective "special account" country (F.E. 184, Sect. IV).

Whereas the previously mentioned payments arising out of current transactions and income items could be made available to non-residents, transfers of capital items were, as a rule, not permitted. It is hardly possible, for lack of space, even to indicate here the complex procedure¹ for the transfer of security holdings in which non-residents have an interest, but a short reference to the introduction of "*blocked accounts*" may give an idea of how the repayment of foreign-owned capital assets was regulated. The export of securities was generally not allowed.

It became obvious soon after the outbreak of the war that large-scale capital withdrawals by non-residents would seriously affect the Bank of England's depleted devisa reserves. In May, 1940, the Treasury made all sales of securities held in the U.K. for non-residents subject to licence, and the transfer of capital repayments to other countries had to be approved by the Bank of England. For several months capital repayments on securities could be transferred through "registered", "special" and certain other foreign (sterling) accounts. In November, 1940, the Treasury instructed the banks that certain capital transfers were to be discontinued and that amounts obtained for non-residents, such as redemption of securities, sales of real estates, winding up of companies, legacies, etc., should be paid into "*blocked accounts*" to be opened in the names of the beneficiaries with authorised banks in the U.K. No transfers were or are allowed from these accounts, but sums could and can be reinvested in specified (about 25) Government securities without reference to the Bank of England. Securities purchased in this way could only be sold or transferred with permission of the Bank of England, but interest on them could be remitted freely to the recipients.

In consequence of an improvement in Great Britain's foreign exchange position in the following years, chiefly due to the "Lend and Lease Agreement" with the U.S.A., some relaxation on the blocking of capital transfers was conceded on October 22nd, 1943. The Bank of England agreed to consider the release as well as the transfer of blocked funds, which originated from various capital payments, e.g., from matured securities, life policies, sale of real estates, legacies, etc. Owing to scarcity of currencies of certain countries, such as Argentina, Canada and Switzerland, blocked sterling funds could

¹ For further details, cf. *Bankers' Almanac*, 1945-46, p. 2,148.

not be released for residents there. In September, 1945, some concessions were made in respect of transfer of blocked funds to Canada up to a maximum of £1,000. The blocking of capital repayments to Switzerland ceased in September, 1946.

In general, it may be said of the British exchange control during the war that the system has worked satisfactorily and attained the desired objectives. First, there has been no depreciation of sterling¹, and the fixed exchange rates, especially the "pegged" dollar-rate, were maintained unchanged. The method of "multiple exchange rates", i.e., introduction of substantially different rates for "regular" and "non-regular" exports, or "essential" and "non-essential" imports, was used as an exception and only on the initiative of some of the "special account" countries² (it was first introduced for transactions with the Argentine in September, 1939, and applied subsequently to Uruguay, Brazil, Chile, etc.). Secondly, no appreciable "capital flight" of residents did occur, and the restrictions on large-scale capital withdrawals of non-residents became very effective after the second year of war. Thirdly, the exchange position, although very precarious in the first half of 1941, was not so far upset that essential imports had to be stopped for lack of devisen, nor was a general "moratorium" necessary. The flexible method of restrictions on capital transfers indicated the intention that the "blocking" of funds would not be maintained indefinitely. Fourthly, the "social cost" of exchange control, i.e., the amount of additional clerical work, was considerably reduced and the enforcement of regulations simplified through conferring some of the Bank of England's powers upon 70 British and about 30 foreign banks in the U.K., which were authorised to approve a large number of transfers, to check the correct carrying out of certain business transactions, etc. Thus the banks became part of the control system and were enabled to assist their customers with necessary information, filling in of forms, etc.—services which are also worthy of being placed on record.

IV. THE PRESENT POSITION

The transition from war to peace in the field of international economics has already been thoroughly analysed and discussed by monetary authorities in Great Britain during the war. The "Proposal for an International Clearing Union" in 1943 represented the "Keynesian approach" to problems of stable exchange rates and expansion of world trade. Among the objects of the plan we find the following references to exchange control:—

"We need an instrument of international currency having general acceptability between nations, so that blocked balances and bilateral clearings are unnecessary . . ."

¹ The discount on sterling notes in Zurich and elsewhere had no significance as exports and imports of notes were restricted.

² Cf. *Bankers' Almanac*, 1945-46, p. 2161 ff.

"There is no country which can, in future, safely allow the flight of funds for political reasons or to evade domestic taxation. . . . Equally, there is no country that can safely receive fugitive funds which constitute an unwanted import of capital. . . . For these reasons it is widely held that control of capital movements should be a permanent feature of the post-war system. It is an objection to this that control, if it is to be effective, probably requires the machinery of exchange control for all transactions. . . ."¹

The attitude of the U.S. Treasury to post-war exchange regulations was expressed in the "White Plan" for the establishment of a "Stabilisation Fund", the objectives of which included "the reduction of the use of exchange control" and "the elimination of bilateral clearing agreements, multiple currency devices, and discriminatory foreign exchange practices", in order to remove obstacles to a revival and expansion of world trade. The two concepts were not necessarily incompatible with exchange control, as the "White Plan" accepted the principle of restrictions on capital transfers.

The Bretton Woods Conference, in July, 1944, which resulted in an agreement between 44 countries for the establishment of an *International Monetary Fund*, formulated the purposes of the Fund with regard to exchange control as follows:

(Art. I, Sect. 3) "To promote exchange stability, to maintain orderly exchange arrangements among members, and to avoid competitive exchange depreciation."

(Art. I, Sect. 4) "To assist in the establishment of a multilateral system of payments in respect of current transactions between members and in the elimination of foreign exchange restrictions which hamper the growth of world trade."

Control of capital transfers was expressly permitted:

(Art. VI, Sect. 3) "Members may exercise such controls as are necessary to regulate international capital movements, but no member may exercise these controls in a manner which will restrict payments for current transactions."

The definition of "current transactions" was given as:

(Art. XIX, Sect. 1) "(1) All payments due in connection with foreign trade, other current business, including services, and normal short-term banking and credit facilities; (2) Payments due as interest on loans and as net income from other investments; (3) Payments of moderate amount for amortisation of loans or for depreciation of direct investments; (4) Moderate remittances for family living expenses."

A further inclusion of other types of current transactions may be considered by the Fund.

Members of the Fund have to be prepared to repurchase, with certain exceptions, foreign-held balances of their domestic currencies. (Art. VIII, Sect. 4) The Fund may require its members to furnish

¹ Cmd. 6437, p. 16.

it with information relative to gold and devisen holdings, their international investment positions, national incomes, Balances of Payments, etc. (Art. VIII, Sect. 5) The obligations agreed upon at Bretton Woods will become effective when the Fund begins its operations at a date to be determined by its members, since the required 65 per cent. of the total of the quotas have been already subscribed.

Although, under the obligations of the Bretton Woods Agreement the British foreign exchange control has to move towards multilateralism, unsettled financial conditions in large areas of the world have made it necessary for the United Kingdom to negotiate individually with various countries and to conclude bilateral monetary agreements with them. The re-establishment of trade relations with liberated countries raised a host of new problems, e.g., re-fixing of exchange rates, release of "frozen assets" held by the Custodian for residents in occupied countries, the introduction of "free accounts" for current transactions with certain countries, etc. These problems were solved not by monetary pacts of a single pattern, but by agreements varying according to the general financial and trade conditions in the States concerned.

Belgium was the first of the liberated countries which concluded, after her successful currency stabilisation, a monetary agreement with Great Britain, resulting in the establishment of "free Belgian Accounts" in February, 1945. The Anglo-Belgian pact served as standard for subsequent agreements with other countries: Denmark, France, Netherlands and Greece in September, 1945, Norway and Yugoslavia in December, 1945, etc. French sterling balances and securities were partially released in September, 1945, and completely freed in February, 1946, while Norwegian bank balances were released in the same month, but assets of other countries remained under the control of the Custodian of Enemy Property, who has granted release of previously acquired sterling balances, securities, and other properties, for meeting certain personal requirements (e.g., maintenance, relief, etc.).

The main provisions of the monetary agreements normally provided for the fixing of exchange rates between sterling and the respective currencies (a devaluation in France altered the rate from Frs. 200 to Frs. 480 to the £) for the selling of each country's own currency to the other to cover imports and other payments, up to a certain limit on either side (any excess has to be paid in gold)—e.g., £5 million in respect of Holland, Switzerland and Portugal—and for the freeing of transfers for current transactions within the "monetary areas" of the respective countries. The Canadian and Swedish Governments, by unilateral action, raised the exchange value of their currencies (on July 5th and July 12th, 1946, respectively).

In consequence of the building up of a network of monetary areas (e.g., Belgian, French, Dutch, Canadian, American, etc.), on the basis of monetary agreements, the number of "free types" of accounts

was increased to sixteen,¹ up to the end of 1945 (now over 20). The characteristic feature of this arrangement is that any sterling payments can be effected from these accounts to any country within the sterling area, while transfers to sterling accounts of residents of the *same* country are free, though payments from sterling accounts of one monetary area to the same type of accounts of *another* monetary area are subject to permission of the Bank of England. Payments of residents within the sterling area into these "free accounts", maintained for foreign residents, have to be approved by the Exchange Control (E.I-Form procedure). The purpose of this system is to prevent the use of sterling for the purchase of "scarce" currencies by countries having "weak" currencies. Only the Bank of England, in dealings with other central banks, may at times exchange amounts of one currency against another.

Although it must be admitted that without a freely convertible sterling the re-establishment of world-trade on a multilateral basis cannot be attained, the present system is not entirely inconsistent with multilateral trade. A step towards introducing multilateral transactions was taken by the Bank of England with the permission for the use of sterling balances for current transactions between Brazil, on the one hand, and the Belgian, Dutch, Danish, etc., monetary areas on the other. (*Times*, February 22nd, 1946.) Thus, if Belgium buys Brazilian coffee, Belgian holdings of sterling will be reduced and Brazilian holdings will increase.

The Anglo-Argentine Agreement (*Times*, September 18th, 1946) stipulated that "as from the date of this agreement all sterling received by Argentina to be freely available for payment for current transactions *anywhere*." Current payments between Argentina and the sterling area (the British mission negotiated for the whole sterling area) will continue to be settled in sterling. This Agreement also released part of Argentina's "blocked sterling" balances of about £130 million; in each of the next four years £5 million will be available for current transactions within the sterling area, or for the repurchase of Argentine securities (public debt and British investments), while £10 million are to be transferred to Brazil in settlement of a debt of Argentine. The amounts remaining on the "blocked account" will carry interest at $\frac{1}{2}$ per cent. per annum, i.e., £5-600,000, which can be converted into other currencies. The rate of $\frac{1}{2}$ per cent. will probably become the standard rate in negotiations with other creditor countries.

As a result of post-war changes in British exchange control we can at present distinguish four main types of non-resident accounts in sterling: (1) "free" accounts maintained for residents in about 20 monetary areas and "old" accounts which are transferable, (2) "special accounts", as described previously, for a group of countries with clearing arrangements, (3) "sterling area" accounts, opened

¹ Cf. *Bankers' Almanac*, 1945-46, p. 2,154.

for "special account countries" which are subject to certain restrictions, and finally, (4) "unfree" accounts, either "blocked" in consequence of capital repayments or held by the Custodian of Enemy Property.

The first two types of accounts can be used for financing current transactions, and balances can be withdrawn freely or transferred to accounts of residents in the *same* country. This development signifies the lifting of exchange restrictions from commercial transactions with a large number of countries, because those sterling balances of non-residents are available for any payments within the "sterling area" and, therefore, can be utilised by foreign importers, in the same country, for payment for British exports. On the other hand, importers in the "sterling area"—once an import licence, if necessary, has been obtained—can automatically have their transfers approved by banks authorised to deal in foreign currencies.

It may be worth mentioning, as a further symptom of a progressive relaxation of exchange restrictions, that residents in the United Kingdom are at present permitted to purchase foreign currencies for travelling abroad up to £75 per year, and businessmen up to £10 per day. Emigrants from the "sterling area" are allowed, since January 31st, 1946, to export capital up to a total maximum of £5,000 during the four years after their arrival in countries outside the sterling area.

V. FUTURE PROSPECTS

In future the British exchange control, in substituting an Exchange Control Law for the present Emergency Powers (Defence) Acts, 1939-45, will have to be adapted to the new situation arising from obligations undertaken under the Bretton Woods Agreement and according to the Financial (Loan) Agreement between the U.S.A. and the United Kingdom. Complete termination of exchange control in the next few years seems improbable as long as a check on undesirable capital transfers and the prevention of a "fundamental disequilibrium" of the Balance of Payments remain necessary.

The situation in respect of the United Kingdom's gold and devisa reserves does not appear unsatisfactory. Although the net gold and U.S. dollar reserves—other currencies were not published—decreased from £605 million to £453 million between August 31st, 1939, and October 31st, 1945, owing to recent gold payments (e.g., by France on February 28th, 1946, of £40 million on account of a British credit of £150 million granted in March, 1945, South African gold transfers, etc.) and the new foreign loans (Canada: \$1,250 million, U.S.A.: \$3,750 million) the position in respect of reserves need not cause disquietude.

There are three main problems affecting the maintenance and technique of British exchange control: (a) short-term foreign indebtedness (liquidation of sterling balances in London); (b) the equilibrium of the Balance of Payments, with special regard to export

policy; (c) control of capital movements, especially to countries outside the sterling area.

In consequence of the war, Great Britain ceased to be a creditor country on capital account. British-owned overseas capital assets, estimated by Lord Kindersley at about £3,700 million at the end of 1938, were substantially reduced by sales or repatriations during the war (by £1,118 million up to June, 1945, about half of this sum to sterling area countries) and by losses in enemy-occupied territories. The external indebtedness of the U.K. increased from £476 million to £3,355 million—of which amount £3,052 million represented short-term liabilities—between August 31st, 1939, and June 30th, 1945. £1,732 million, or more than half of the total liabilities, were owed to India and the Middle East; £991 million to Dominions and other sterling area countries; and only £632 million, or 18.85 per cent. of the total indebtedness, to the rest of the world.

The problem of liquidation of "blocked sterling balances"¹—held in form of bank deposits, Treasury Bills and other Government securities in London—was considered in detail in the Loan Agreement between the U.S.A. and the United Kingdom, and three categories were distinguished (Art. X, Sect. 1):

- (a) balances to be released at once, with free convertibility into other currencies for current transactions;
- (b) balances to be transferred after 1951, and to be released by instalments over a period of years;
- (c) balances to be cancelled as a contribution to war and post-war expenditure or to be set off or adjusted against other services.

Great Britain's obligation to secure an early liquidation of sterling balances will necessitate the carrying out of negotiations with her creditors about conditions of repayments. The U.S. Loan, as is clearly stated in the Agreement, cannot be used for discharging obligations of the U.K. to third countries, but the agreed dissolution of the "Dollar-Pool"—payments into which have increased the volume of sterling debts—may set free considerable amounts of "hard currency" for the purpose of repayments of sterling balances coming under group (a). The most important problem in this connection is the liquidation of India's sterling claims (£1,271 million at the end of July, 1946), especially if it is desired (cf. *Times*, February 27th, 1946) to use part of these funds for India's payments in fulfilment of commitments undertaken by her at Bretton Woods.²

The problem of maintaining sufficient foreign exchange reserves is necessarily linked up with the balancing of current payments in

¹ Total at the end of March, 1946 = £3,500 million ca.

² Cf. *United Nations Monetary and Financial Conference*, Cmd. 6546, "Monetary Fund," Art. III, 3 and "International Bank for Reconstruction," Art. II, 8.

Great Britain's international account. In the U.S. Loan Agreement the United Kingdom accepted the obligation to abolish exchange control of current transactions with the U.S.A. immediately after the effective date of the Agreement, and to remove within one year, with certain exceptions enumerated in the provisions of Bretton Woods (Art. XIV, 2), all restrictions on payments and transfers for current transactions, for which the free convertibility of sterling into foreign currencies is to be restored. This obligation does not exclude a licensing system for certain imports, without discriminatory tendencies, or a tariff system based on Imperial preference, which may, however, be "scaled down" by the International Trade Conference. The abolition of exchange control on current transactions is compatible with directed trade, and some direction is possible even in case of unrestricted imports at competitive prices.

The upward trend of British exports¹ together with the recently obtained Canadian and U.S.A. Loans has improved Great Britain's Balance of Payments position so much that a considerable increase in imports (total = January–Sept., 1946, £925 million), especially of raw materials, certain machines, etc., would support an increased productivity without upsetting her current Balance of Payments. In 1913 the ratio of British imports to the national income was 35 per cent., but owing to post-war trade conditions, reduction of overseas assets, etc., this ratio had fallen to 21 per cent. by 1938. Taking the present national income at about² £8,500 million, a ratio of 20 per cent. would leave much room for expansion of the present volume of imports.

The key position in the trade balance, however, is assigned to exports. The long-term problem may be expressed by the formula: what to produce, where to sell and at what prices? After the abandonment of correctives derived from exchange control, a long-term export policy will probably obtain its best results from concentrating on export of capital goods, especially to Dominions and Colonies. Some opportunities may be supplied by the activities of the newly founded International Bank for Reconstruction, if credits and credit guarantees are made available to less developed countries for purchases of investment goods. With regard to price developments, particularly of consumption goods, the present scarcity of supplies may diminish appreciably within two or three years and the importance of price control may vanish. The assessment of future elasticities of demand in different countries, as well as of their marginal propensities to import, is mainly a matter of conjecture.

The deficit on Great Britain's Balance of Payments in 1946—estimated first rather pessimistically at £750 million—may be reduced in the following years if the value of import surpluses remains fairly constant and, at the same time, "invisible items" in the Balance

¹ Total = between Jan., 1946, and end of Sept., 1946, £680 million. *Monthly Digest of Statistics*.

² Cmd. 6784, p. 3: net product at factor cost in 1945.

of Payments (e.g., shipping income, receipts from overseas investments, banking and insurance services, etc.) yield higher amounts. A further improvement could be obtained by deduction of income tax on *all* transfers of interest and dividend abroad. At present some government securities are free of tax, and amounts deducted from dividends and certain interests "at source" can in many cases be claimed by and refunded to British subjects living abroad.

In spite of the expected improvement in the Balance of Payments, Great Britain's return to a free exchange system in the near future would be premature. If the obligation to offer proceeds of exports in foreign currencies to the Bank of England were to be abolished, the supply of devisen would dry up rapidly as a result of "hoarding". Economists generally agree on the necessity of maintaining control over capital movements in the case of "capital flight". The British exchange control, therefore, will have to be adapted to such purposes as: the freeing of "current transactions" (as defined in Bretton Woods, Art. XIX, 4) from exchange regulations; the modification of restrictions on capital transfers; the compulsory sales of proceeds of exports; and the continued centralisation of dealings in foreign currencies.

With regard to the control of undesirable capital movements, the following four main motives should be considered:

- (a) *Safety*. People are induced to "hoard" foreign currencies or to transfer their assets abroad in case of political uncertainties, inflation and depreciation.
- (b) *Evasion of heavy taxation*. Tax exemption or low rates offer some inducement to migrating capital, if there are no special risks.
- (c) *Investment*. Discrepancies in short-term rates and in the marginal efficiencies of capital investments in different countries.
- (d) *Expansion of business enterprise abroad*. In some cases the alternative, home investment versus investment abroad, may be decided in favour of the latter, if strengthening of business position abroad appears necessary.

The first motive has no importance in Great Britain. With regard to categories (b) and (c) British exchange control will have to apply prohibitive regulations. In the fourth case every transaction should be judged on its merits, and an advisory committee of experts might render useful services to exchange control authorities. In order to obtain ample supplies of foreign currencies from exports and to prevent undesirable capital movements, the machinery of exchange control cannot be dispensed with in the next years, but a simplification of the system is feasible, while a very large part of present transactions could be exempted from scrutiny altogether. As long as the "sterling area" remains a single monetary area, capital transfers can be made therein without restrictions. This fact requires the continuation of

similar exchange restrictions in all sterling area countries. With regard to capital transfers to non-sterling area countries, the present regulations have proved to be effective enough to prevent "undesirable" capital movements.

During the war and post-war transition British exchange control has been skilfully used to serve the country's economic requirements. Some may regard it as a bitter medicine, but its usefulness can hardly be questioned. It was administered in varying dilutions, the degree of which depended mainly on conditions in the spheres of economic realities.

Monopoly Pricing with Interrelated Costs and Demands

By R. H. COASE

ONE of the great advantages of Mrs. Robinson's analysis of monopoly pricing in her book, *The Economics of Imperfect Competition*, was that the geometrical methods which she employed enabled those who knew little of mathematics to understand the elements of monopoly pricing. But Mrs. Robinson did not attempt to analyse the pricing problems of a producer who sells more than one product. This is, of course, in practice the usual case and many economists must have encountered the difficulty of trying to apply simple monopoly theory to problems which were more complicated than the assumptions underlying the ordinary monopoly diagram with its curves of marginal cost and marginal revenue. If several products are sold, it will usually be found either that the costs of production of the several products are interrelated or that the demands are interrelated or that both costs and demands are interrelated. The pricing problem in these cases has not been ignored by economists; but it has been left to the mathematical economists.¹ Edgeworth and Hotelling have both written on this subject but their treatment is one of considerable difficulty, at least to the non-mathematical reader.² In this article, I propose to give a solution to this problem which involves simple geometrical methods only. The case I shall consider is one in which a producer is selling two products, A and B. And I shall assume that the producer aims at maximising his profits and that he has that knowledge of his demand curves and cost curves which is assumed in simple monopoly theory.³ I would add that my aim is to show the nature of the economic forces at work rather than to analyse in detail all possible cases.

THE CASE OF INTERRELATED COSTS

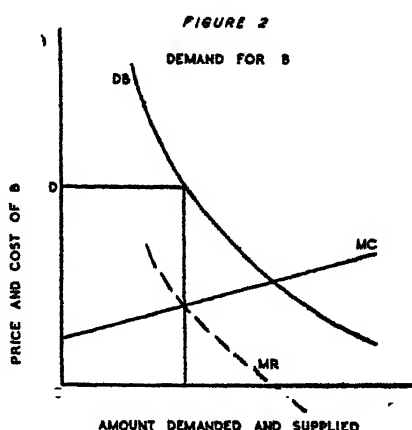
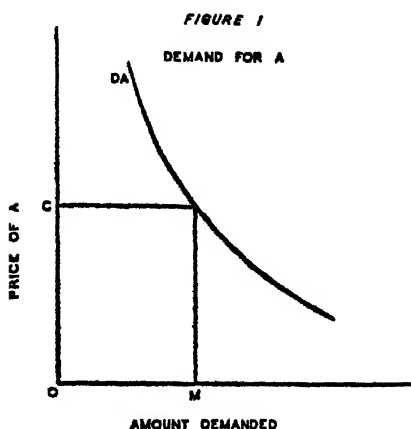
I shall assume in this section that the costs of production of the two products are interrelated but that the demands are independent. The demand curve for each product remains unchanged whatever price is charged for the other. The costs of production are assumed to be interrelated in the sense that the marginal cost of any quantity

¹ Except for an article by M. W. Reder, "Inter-Temporal Relations of Demand and Supply Within the Firm", *Canadian Journal of Economics and Political Science*, February, 1941. Mr. Reder's treatment is, however, different from that employed in this article.

² Edgeworth, *Papers Relating to Political Economy*, 1925, Volume I, pp. 126-135; Hotelling, "Edgeworth's Taxation Paradox and the Nature of Demand and Supply Functions", *Journal of Political Economy*, October, 1932.

³ For a discussion of some of the modifications that must be made to the assumptions of simple monopoly theory if it is to be used to explain monopoly pricing in practice, see Coase, "Some Notes on Monopoly Price", *The Review of Economic Studies*, October, 1937.

of A is dependent on the output of A and B; and the same is true for B. With given demand curves for A and B, we can discover the price a producer will charge for each of these products if the marginal cost curves can be determined. Let us assume that DA represents the demand curve for A; that the producer is charging a price OC for A and that the amount demanded at this price is OM. (Figure 1.) But if the output of A is given, the marginal cost curve of B, which depends on the output of A and B, becomes quite determinate. Let the marginal cost curve of B, given that the output of A is OM, be MC. Then assuming that the marginal revenue curve corresponding to the demand curve for B (DB) is MR, the price which the producer would charge for product B is OD (Figure 2). Thus, given the price for A, we can say what price should be charged for B in order to



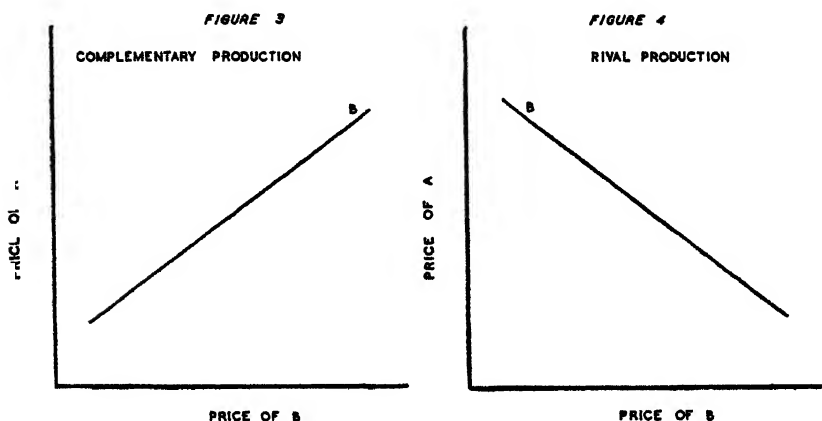
maximise profits. If a lowering of the price of A, and consequently an expansion of the output of A, leads to a *lowering* of the marginal cost curve of B, the price of B which would maximise profits would fall as the price of A falls; similarly, if a lowering of the price of A leads to a *raising* of the marginal cost curve of B, the price of B which would maximise profits would rise as the price of A falls. The first case I shall call, following Edgeworth, complementary production and the second case rival production.¹

We can therefore ascertain the price of B, corresponding to any given price of A, which would maximise the producer's profits. In the following diagrams (Figures 3 and 4), the line B represents the price which would be charged for B with any given price of A. Of

¹ It should be noted that complementary production in this sense does not imply that the total additional costs of producing any given quantity of B (the amount by which total costs would be reduced if the production of B was abandoned) are lowered; all that is necessary is that the marginal cost curve should be lower around the point at which it cuts the marginal revenue curve. That is, the marginal cost curve for B need not be lowered throughout its whole length but only over a certain range. In the same way, rival production does not imply that the total additional costs of producing any given quantity of B are raised.

course, there is no reason why the production of B should not be rival for some ranges of the output of A and complementary for others; in which case, the line would combine the characteristics of the two lines in Figures 3 and 4 and a single price of B could correspond to two or more prices of A.

So far I have been considering only the price of B which corresponds to any given price of A. It is, of course, possible to draw a line which is similar to the one drawn up for B and which shows the price of A corresponding to any given price of B. This enables us to determine the prices which would be charged by the producer for A and B. If total profits are to be maximised, it is necessary that for both products marginal cost should equal marginal revenue. But this is possible only if the price of B which corresponds to the price of A is the same as the



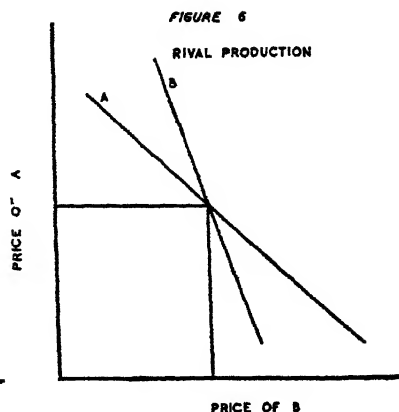
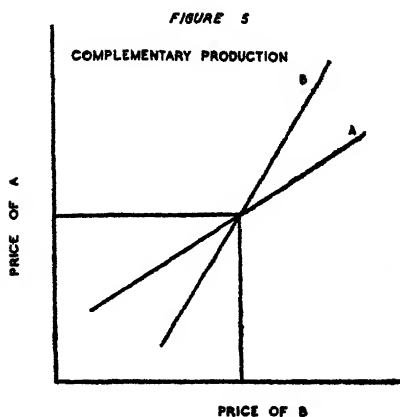
price of B which would induce the producer to charge that price for A. This is given by the point at which the line for A cuts the line for B.¹

The two main cases are shown in Figures 5 and 6.² The line A represents the price of A that would be charged given any price of B; the line B represents the price of B that would be charged given any price of A.

To conclude this section, I propose to enquire into the effect on the prices of the two products of (a) a tax on the production of one product, and (b) a change in the demand for one product.

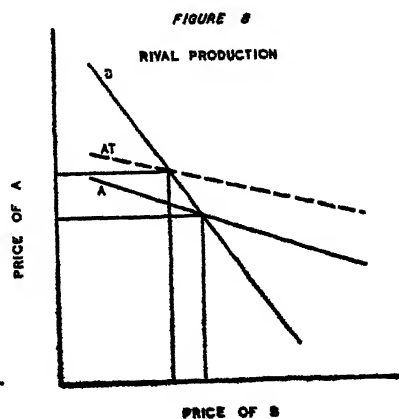
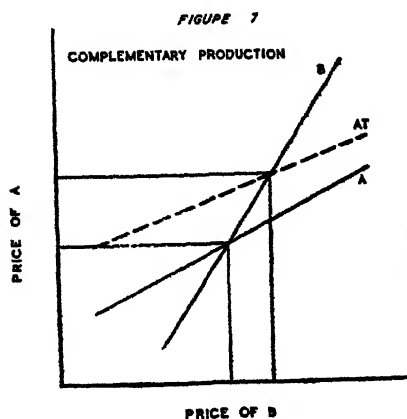
¹ Care must, of course, be taken to see that this point represents a maximum and not a minimum of profits. This point of intersection would represent a point of minimum profits if the position of the A and B lines in Figures 5 and 6 were reversed. The condition for the point of intersection to be one of maximum profits may be put as follows. Assume that the price of one product, for instance, A, is raised. Then in order to maximise profits the price of the other product, B, will have to be altered. If at this new price of B, in order to maximise profits, the price of A ought then to be lowered, the point of intersection is one of maximum profits.

² For convenience and as approximations, straight lines are used where possible in the diagrams in this article. The argument would remain unchanged if curves of a more complex shape were employed.



Assume a tax is put on the production of each unit of A. This implies that the marginal cost curve of A (corresponding to any given price of B) will be higher than it was before by the amount of the tax. The effect of the tax would be to raise the price, corresponding to any given price of B, which the producer would wish to charge for A. The price which the producer would wish to charge for B corresponding to any given price of A would be unaffected since any given price of A would still represent the same output of A and consequently the marginal cost curve of B (corresponding to any given price of A) would not be altered.

The effect of the tax on A can be seen from the following diagrams (Figures 7 and 8). The line AT represents the price of A given the price of B *after* the tax on A has been imposed. In the case of complementary production, the price of both A and B would rise; in the case of rival production, the price of A would rise but the price of B would fall.

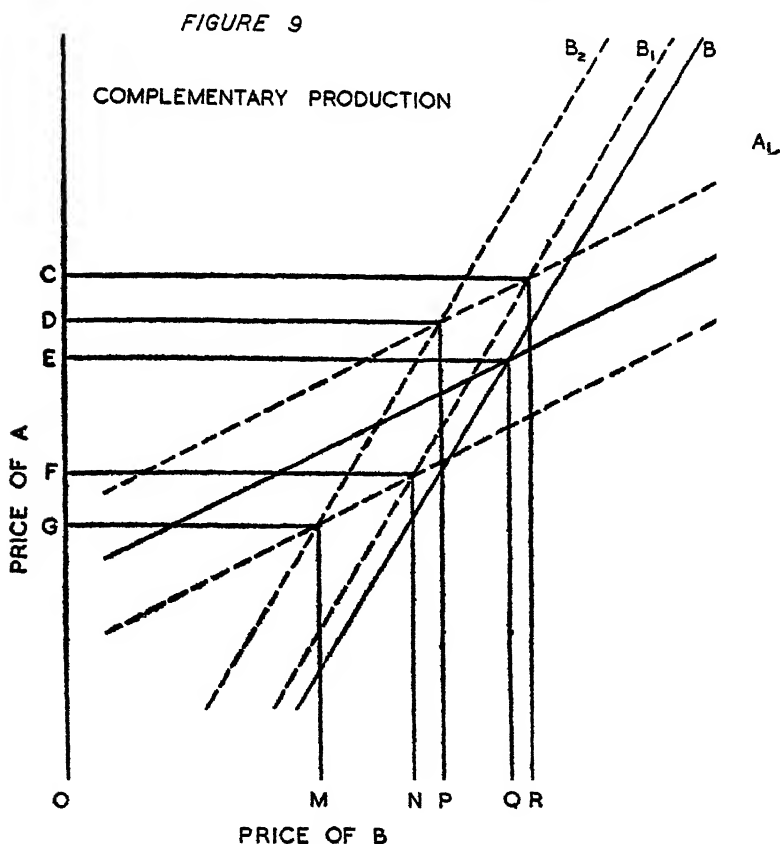


The logical steps which would lead the producer to alter his prices in this way may be set out as follows. The tax on A would cause the producer to wish to raise the price of A given that the price of B is unaltered. This would, however, mean that the amount demanded and supplied of A would decline. If production were complementary, this would mean a rise in the marginal cost curve of B and would therefore imply a rise in the price of B and consequently a fall in the amount demanded and supplied of B. This would in turn imply that the marginal cost curve of A would again be raised and that the producer would wish to put the price of A higher still. But this would mean that the price of B would need to be put higher—again with repercussions on the price the producer would wish to charge for A. And this chain of reasoning would cease to apply only when at the higher prices of A and B, the price of A which corresponded to the price of B was the same as the price of A which would induce the producer to charge that price of B. If production were rival, the rise in the price of A and the fall in the amount demanded and supplied of A would mean that the marginal cost curve of B would be lowered. This would mean a fall in the price of B and an expansion in the amount supplied and demanded of B; this would imply a rise in the marginal cost curve of A and therefore a rise in the price of A and a fall in the amount supplied and demanded of A; and this would lead the producer to wish to lower the price of B still further. Once again, this chain of reasoning would continue to apply until the price of A had risen sufficiently and the price of B had fallen sufficiently to make the price of A corresponding to the price of B the same as the price of A which would induce the producer to charge that price of B.

Let us now consider the effect of a change in demand for one of the products on the prices which the producer would wish to charge for the two products, for example, the effect of a rise in the demand for A on the prices of A and B. Since the demand for B is unchanged, the same amount would continue to be demanded at any given price of B and therefore the marginal cost curve of A corresponding to any given price of B would not alter. The effect of the rise in the demand for A on the price the producer would wish to charge for A would depend on the elasticity of the new demand curve as compared with the old and on the shape of the marginal cost curve.¹ It would be possible for the price to rise with an output smaller, the same, or greater than before or for the price to fall with an output greater than before. Consequently, the price of A corresponding to any given price of B may rise or fall following the increase in the demand for A. The price of B corresponding to any given price of A will also be affected for each price of A will now correspond to a different output. But the price the producer would wish to charge for B can be affected in one way only, for since the demand for A has risen, each price of A will now correspond to a larger output of A. The

¹ See Joan Robinson, *The Economics of Imperfect Competition*, pp. 60-70.

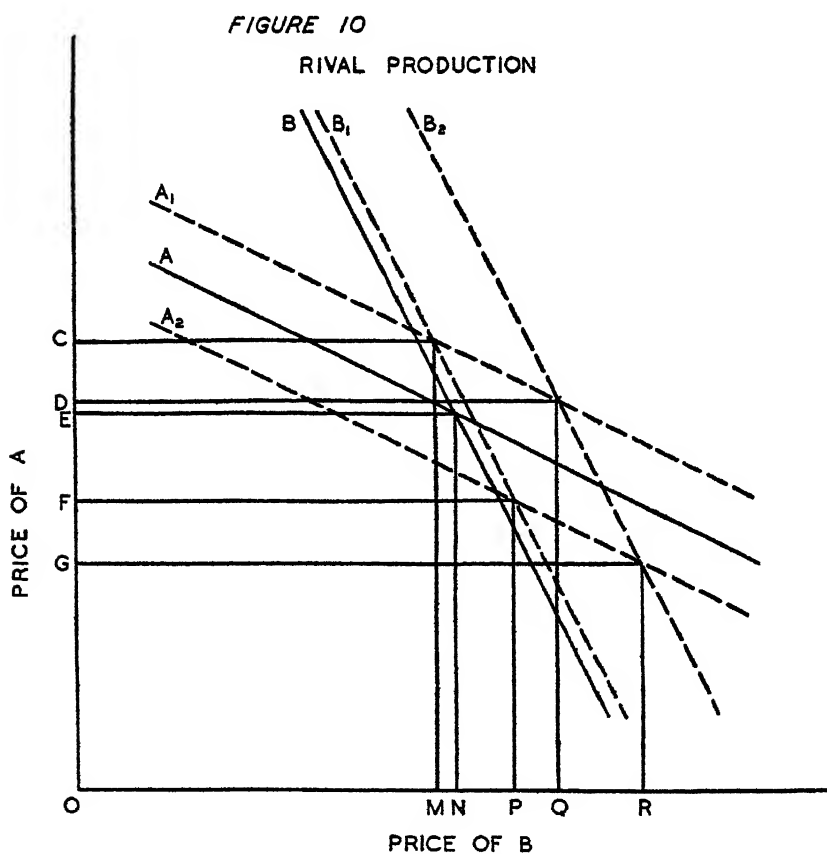
new curve of the price of B corresponding to any given price of A can be obtained simply by substituting for the old price of A at which any amount was demanded, the new price at which this same amount is demanded. Consequently, the price of B corresponding to any given price of A will fall if production is complementary or will rise if production is rival. All the possibilities following the increase in the demand for A are set out in the following diagrams (Figures 9



and 10). The lines A_1 and A_2 show alternative positions of the line representing the price of A that would be charged given the price of B after the increase in demand for A. A_1 represents the position if the increase in demand leads the producer to wish to raise the price of A given the price of B. A_2 represents the position if the increase in demand leads the producer to wish to lower the price of A given the price of B¹; the lines B_1 and B_2 show alternative positions of the

¹ It is, of course, possible for the price which the producer would wish to charge for A, corresponding to any given price of B, to be above the old price for some prices of B and to be below the old price for others.

line representing the price of B that would be charged given the price of A after the increase in the demand for A. The extent of the shifting of the B line will depend on the extent of the shifting of the demand curve for A. Thus, the shift in Figures 9 and 10 from line B to line B_2 implies that there has been a greater increase in demand for A than the shift from line B to line B_1 .



I shall describe in some detail the logical steps that would lead the producer to charge the prices indicated by the intersection of the new curves in the case of complementary production (Figure 9). Let us assume that the increase in the demand for A leads to the producer wishing to raise the price of A. Assume the producer raised the price of A to the higher level required by the new demand curve (the price of B being unchanged). At this higher price of A the price which the producer would wish to charge for B would be affected. For the output of A at the new price may be greater or smaller than the old

output.¹ If it is greater, the producer would wish, because production is complementary, to lower the price of B. This situation is represented by the line B_2 . This would imply an increase in the output of B and therefore a fall in the marginal cost curve of A. This in its turn would imply that the price charged for A would have to be lower. But this would imply a greater output for A and therefore a still lower marginal cost curve of B and therefore a still lower price for B. This argument would ultimately lead to the producer charging OD for product A and OP for product B.

Next let us consider the case in which the effect of raising the price of A to the new level required by the new demand curve of A is to lower the output of A. The producer would then wish, since production is complementary, to raise the price of B. This situation is represented by the curve B_1 . This would imply a lower output of B and the marginal cost curve of A would rise. This would in its turn imply that the price of A would have to be raised. This would again imply a fall in the output of A and a raising of the marginal cost curve of B, which would mean a rise in the price of B and a fall in the output of B. This would in its turn have repercussions on the price of A. Following through this logical process would ultimately lead the producer to charge OC for product A and OR for product B.

Now let us suppose that the increase in the demand for A leads the producer to charge a lower price for A. This situation is represented by the line A_2 . This is bound to mean an increase in the output of A and, since production is complementary, a fall in the price of B. But this will imply a fall in the marginal cost curve of A and a lowering of the price of A. Once again, this argument would lead the producer ultimately to charge either OF for product A and ON for product B or OG for product A and OM for product B if we assume that the lines B_1 and B_2 in Figure 9 now represent the position with two alternative demand curves which lead to a lowering of the price of A corresponding to any price of B.²

A similar argument would show why in the case of rival production, a rise in the demand for A would lead the producer to alter the price of A from OE and the price of B from ON to either OC for A and OM for B, or OD for A and OQ for B, or OF for A and OP for B, or OG for A and OR for B (Figure 10).

It will be seen that with both complementary and rival production, following an increase in demand for one of the products, a rise in the price of A may be associated with either a higher or lower price of B. But a rise in the demand for A may result, if production is complementary, in a fall in the price of A and a fall in the price of B, while if production is rival, it may result in a fall in

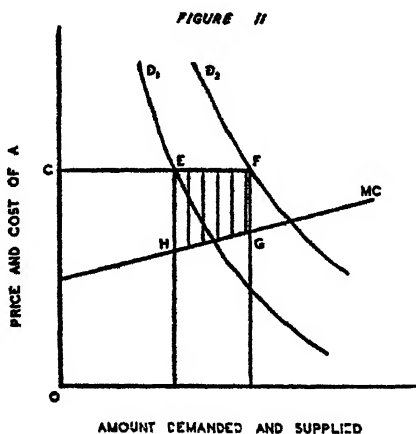
¹ It could even be the same but this case is not discussed.

² If these lines were accurately drawn, the lines which correspond to a demand curve which leads to a fall in price would, of course, be different from those which correspond to a demand curve which leads to a rise in price.

the price of A and a rise in the price of B. The effect of a fall in the demand for A can be obtained by reversing the changes which have been described.

THE CASE OF INTERRELATED DEMANDS

In this section I shall make the assumption that the demand curves of the two products are interrelated but that the marginal cost curves are independent. The amount demanded of A is dependent on the prices of A and B; and this is also assumed to be true for B. Let us consider what price should be charged for B. Given the price of A, the demand curve for B may be obtained. It might be thought that given the demand curve for B and given the marginal cost curve of B (which is independent of the output and price of A), the price of B is given by the equation of marginal cost and marginal revenue. But this is not so. Every alteration in the price of B will affect the

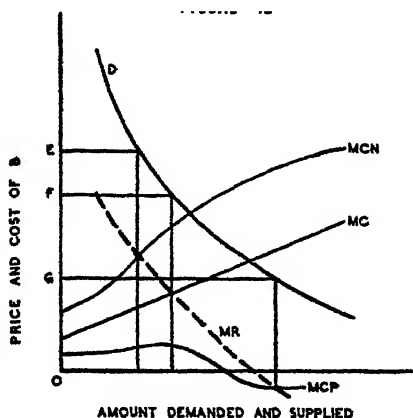


amount of A demanded at whatever price of A is fixed. If the demand for A is complementary with that for B, a lowering of the price of B will result in the amount of A demanded at the price fixed for A expanding; if the demand for A is competitive with that for B, a lowering of the price of B will result in the amount of A demanded at the price fixed for A decreasing. It is clear that in deciding what price to charge for B (with any given price of A) these consequential changes in net receipts from A, as the price of B is altered, will have to be taken into account. Generally, a lowering in the price of B will lead to an increase in the net receipts from A when the demands for A and B are complementary and to a decrease in the net receipts from A when the demands for A and B are competitive.¹ (See Figure

¹ But it should be noted that if the marginal costs of production of A rise above the price which is charged for A, in this case, if the demand is complementary, a fall in the price of B will lead to a decrease in the net receipts from A, while if the demands are competitive, a fall in the price of B will lead to a rise in the net receipts from A.

11. D_1 represents the demand curve for A at one price of B. D_2 represents the demand curve for A at another price of B. MC represents the marginal cost curve of A. The change in the net receipts from A at the price OC for A is represented by the area EFGH.)

These changes in the net receipts from A must be added to the difference between marginal revenue and marginal cost of B if they are positive and subtracted if they are negative to discover that price of B which (corresponding to any given price of A) maximises the producer's profits. But in the following diagram (Figure 12), in order to simplify matters, these changes in the net receipts from A are deducted from marginal costs when positive and added to marginal costs when they are negative. In Figure 12, D represents the demand curve for B with a given price of A. MR represents the marginal revenue curve derived from this demand curve. MC represents the



marginal cost curve of B. MCN represents the marginal cost curve amended to take account of the changes in the net receipts from A when these are negative, while MCP represents the position when these are positive.

This diagram shows that the price charged may be either above (OE) or below (OG) the price at which marginal cost equals marginal revenue (OF) and that the marginal revenue from B at the price charged may even be negative. But it is clear how one obtains the price which the producer would charge for B given any price of A; and in the same way, one could obtain the price of A corresponding to any given price of B.

What can be said about how the price the producer would wish to charge for A will alter as the price of B alters? Assume that the demands for A and B are complementary, so that as the price of B falls, the demand curve for A rises. The effect of this rise in the demand curve for A on the price of A will depend on how the elasticity of

demand alters and on the shape of the marginal cost curve. The price of A may either rise or fall according to well-known rules. But another factor needs to be taken into account. The price charged for A with any given price of B also depends on the change in the net receipts from B at that price of B. This depends on the extent of the shifting of the demand curve for B at different prices of B. (Compare Figure 11). The change in net receipts may be greater, or smaller, or remain the same as the price of B is lowered, with a consequential effect on the price the producer would wish to charge for A. For example, if we take the position shown in Figure 11, the change in net receipts represented by the area EFGH might be greater or smaller at a lower price. This depends on the extent of the expansion of demand at different prices in shifting from D_1 to D_2 . And the marginal cost curve will also play its part. If marginal costs rise with an increase in the output of B, this will tend to reduce the additional net receipts from B at a lower price of B; and it will tend to raise the additional net receipts from B at a lower price of B if the marginal costs of B fall with expanding output. It is therefore hardly possible to generalise on how the price the producer will wish to charge for A will alter as the price of B alters. This will depend on the facts of each particular case. The same would be true if the demands for A and B were competitive. One thing is clear—there is no reason to suppose that the lines showing the price the producer would wish to charge for one product given the price of the other will have the simple form of the lines in Figures 5 and 6. And in particular there is no reason to suppose that in the case of competitive demands, a higher price for one product will necessarily mean that the producer will charge a higher price for the other product nor that in the case of complementary demands a lower price for one product will necessarily mean that the producer will charge a higher price for the other product. But we can say that the prices which the producer would charge for A and B will be such that, given the price of the other, profits are maximised and that therefore the prices the producer would charge can be discovered in the same way as with interrelated costs by noting the point at which the lines intersect which show the price the producer would charge for A given the price of B and the price the producer would charge for B given the price of A.

Now we have to consider what the effect would be on the prices of both products of (a) a tax on the production of one product, and (b) a change in the demand for one product.

Let us assume that a tax is put on the production of each unit of A. What would be the effect on the price the producer would wish to charge for A? The effect would be to raise the marginal cost curve of A; the price that the producer would wish to charge for A corresponding to any given price of B would rise. But the price which the producer would wish to charge for B given any price of A would also be affected because, in deciding what price to charge for B, the producer

takes into account the changes in the net receipts from A when the price of B is varied. If the demand for A tends to increase as the price of B falls, that is, if the demands are complementary, the gain from lowering B's price will be less (if a tax is put on the production of A), and consequently the price which the producer would wish to charge for B, corresponding to any given price of A, would be higher than it was before the tax was imposed; or, if the demand for A tends to decrease as the price of B falls, that is, if the demands are competitive, the loss from lowering the price of B will be less (if a tax is put on the production of A) and consequently the price which the producer would wish to charge for B corresponding to any given price of A would be lower than it was before the tax was imposed.¹ What would be the effect on the prices of A and B of the tax on the production of A? We know that the effect of the tax would be to raise the price which the producer would wish to charge for A given any price of B. We know too that the price of B corresponding to any given price of A would rise if demand is complementary and would fall if demand is competitive. We know further that there is no particular shape of the curves which show the price of one product given the price of the other which we can associate with complementary or competitive demands. The lines in Figures 13 and 14 show the position, although it should be noted that it is unlikely that in practice the lines would have such simple shapes. In these diagrams, B represents the price that the producer would charge for B given the price of A (before the tax was imposed) while A represents the price that the producer would charge for A given the price of B (also before the tax was imposed). AT represents the price that the producer would wish to charge for A given the price of B after the tax was imposed, while the lines showing the price the producer would wish to charge for B given the price of A after the tax was imposed are represented by BT in the case of competitive demands and by BL in the case of complementary demands.

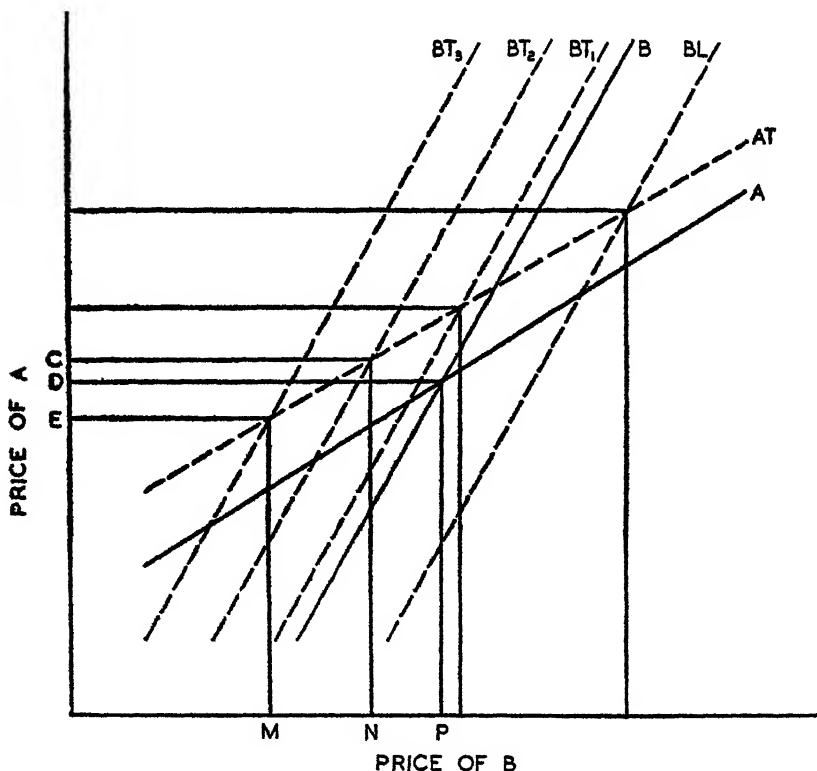
Let us examine in some detail the case in which the curves have the general shape of those in Figure 13 and in which demands are competitive. The effect of the tax on A would be to make the producer wish to raise the price of A given that the price of B is unchanged. The effect of this alteration in the price of A on the price of B would be, in the absence of the tax, to cause the producer to raise the price of B. But the effect of the tax is to make a lower price of B desirable than was the case before, because the loss in net receipts from A which results from a lowering of the price of B will be less. And so it might be that the price of B at the higher price of A (following the imposition of the tax) would be lowered—as in the curves marked BT₃ and BT₂.² But given that the price of B should be lowered,

¹ Except in the case described in footnote ¹, p. 286.

² It could be with competitive demands, and curves of the general shape of those in Figure 13, that the price of B would be raised. This situation is represented by the curve BT₁.

it would mean (with curves of the shape of those in Figure 13) that it would pay to charge a lower price for A; and this would imply that a still lower price of B should be charged. And this chain of reasoning would not cease to apply until the price of A corresponding to any given price of B was the same as the price of A which would induce the producer to charge that price of B. When this is so, the price of A may have risen (from OD to OC) and the price of B may

FIGURE 13



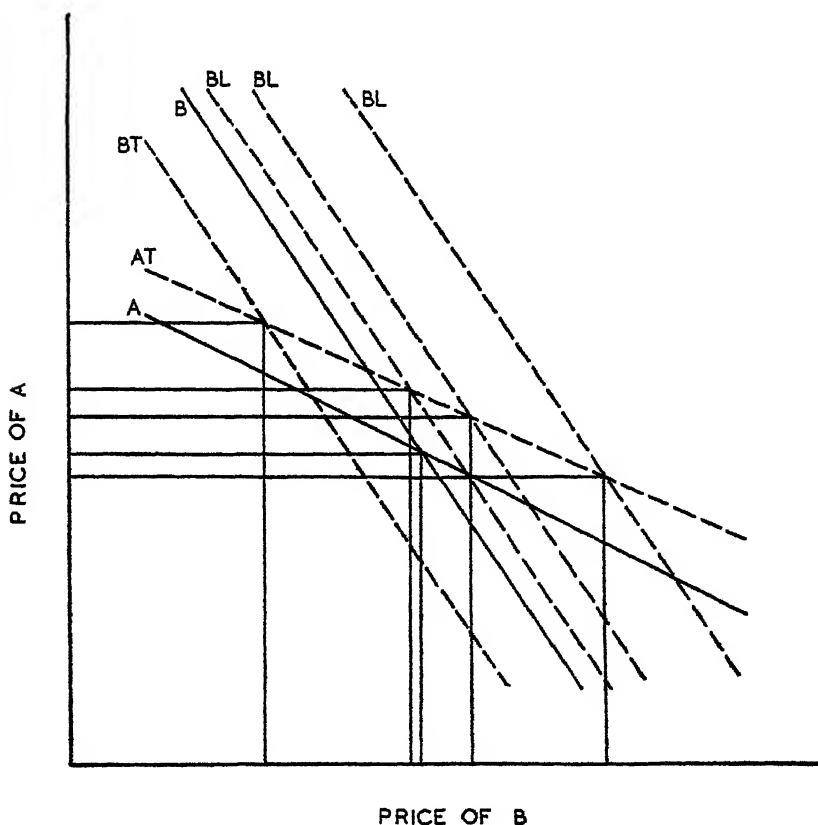
have fallen (from OP to ON), or it could be—and this is the Edgeworth taxation paradox—that the prices of both A and B fall (A from OD to OE and B from OP to OM).¹

The case in which demands are complementary represented in Figure 13 as well as the cases of competitive and complementary

¹ I have to confess that I have been unable to follow Edgeworth's own explanation of this phenomenon, *op. cit.*, Volume I, p. 145. But the explanation given in the text applies exactly to the arithmetical example given by Hotelling in his article, *loc. cit.*, pp. 579-581.

demands represented in Figure 14 could be analysed in a similar way. In the case of competitive demands, the effect of the tax on the production of A may be to cause the producer to raise the price of A and to lower the price of B, or to raise the prices of both A and B, or to lower the prices of both A and B (the Edgeworth taxation paradox). In the case of complementary demands, the effect of the tax on the production of A may be to cause the producer to raise

FIGURE 14



the price of A and to lower the price of B or to lower the price of A and to raise the price of B or to raise the prices of both A and B.

Now let us consider the effect of a change in the demand for one product on the prices charged for the two products. Assume that there is an increase in the demand for A, the demand for B (given any price of A) remaining unchanged. When demands are interrelated one would normally expect a factor which affected the demand for A to affect the demand for B also; this case has therefore analytical

rather than practical significance.¹ The effect on the price of A of an increase in the demand for A may be either to raise or to lower the price the producer would wish to charge for A, given the price of B. The price which the producer would wish to charge for B, since the demand for B (given the price of A) is unchanged and the marginal cost curve of B is independent of the price and output of A, can be affected by the change in the demand for A only if this influences the change in the net receipts from A at any given price of A. This depends on the responsiveness of the new demand curve for A to changes in the price of B as compared with the old. It is clear that this may result in the price of B corresponding to the price of A either rising or falling. In the case therefore of a rise in the demand for one product, when demands are interrelated, all the possible price movements may follow: the price of both A and B may rise or fall, or the price of A may rise and that of B may fall, or the price of A may fall and that of B may rise.

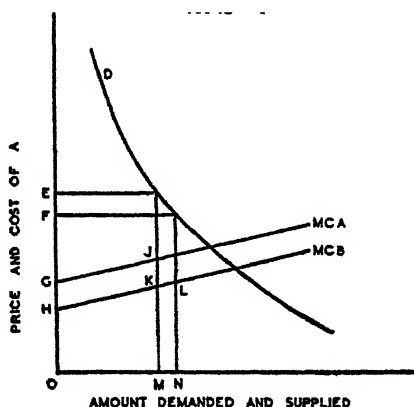
THE CASE OF INTERRELATED COSTS AND DEMANDS

In the case in which there are interrelated costs and demands, the amount demanded of each of the products is dependent on the prices of both and also the marginal costs of each product are dependent on the outputs of both. How can this situation be analysed? Let us assume, as before, that one of the prices, say that of B, is given. How then is the price of A determined? If the price of B is given, the demand curve for A becomes quite definite and from this a marginal revenue curve can be derived. But how is the marginal cost curve of A to be obtained? If demand is complementary and production is complementary, or if demand is competitive and production is rival, the effect of lowering the price of A will be, through its effect on the output of B, to lower the marginal cost curve of A. On the other hand, if demand is competitive and production is complementary, or if demand is complementary and production is rival, the effect of lowering the price of A, through its effect on the output of B, will be to raise the marginal cost curve of A. And in deciding on the price to charge for A in these circumstances, the producer will not be concerned with the marginal cost of production in the sense of the additional cost of an additional unit of output (given the output of B), which is the marginal cost as ordinarily conceived, because the output of B will not in fact remain unchanged. The producer will consider what the additional cost of an additional unit of A is, given all the consequential changes which follow with any given price of B. The diagram in Figure 15 will enable us to see the relation between marginal cost as ordinarily conceived and marginal cost as

¹ See O. Lange, "Complementarity and Interrelations of Shifts in Demands", and J. R. Hicks, "A Comment", *Review of Economic Studies*, October, 1940; and D. H. Robertson, J. R. Hicks and O. Lange, "The Interrelations of Shifts in Demands", *Review of Economic Studies*, 1944-45.

it must be conceived in order to solve this pricing problem. Let the curve *D* represent the demand curve for *A* with a given price of *B*. Let *MCA* and *MCB* represent two marginal cost curves for *A*. These curves represent marginal cost curves for *A* given the output of *B*, which, if the price of *B* is given, will vary with the price of *A*.

Let us assume that the effect of lowering *A*'s price from *OE* to *OF* is, through its influence on the output of *B*, to lower the marginal cost curve of *A* and that this curve changes from *MCA* to *MCB*. The total cost of the output *OM* is represented by the area *OGJM*; the total cost of the output *ON* is represented by the area *OHLN*. The additional cost of the additional output is therefore represented by the area *MKLN* minus the area *HGJK*. The marginal cost of the output *MN* as ordinarily conceived would be *MKLN*. But for the purposes of this problem, the marginal cost would be less than *MKLN* and might even be negative. Of course, if the effect of lowering *A*'s price



is to raise the marginal cost curve of *A*, the marginal cost as it must be conceived for the purposes of this problem would be higher than the marginal cost as ordinarily conceived. But it is clear how the marginal cost curve is obtained in order to solve this pricing problem.

But although we have shown how the marginal revenue and marginal cost curves are obtained for *A* given the price of *B*, one further step remains before we can explain how the price of *A* corresponding to any given price of *B* is determined. The change in the net receipts from *B* as the price of *A* is lowered has also to be taken into account. The change in total receipts from *B* will depend on whether the demands are complementary or competitive and on the extent of the shifting of the demand curve for *B*. The change in the total costs of production (other than the costs included in the marginal cost curve of *A*) will be subject to two influences. The expansion of the output of *A* may

increase or decrease these costs for any given output of B.¹ But the output of B will in fact alter and this will also affect the change in the costs (other than those included in the marginal cost curve of A).

We can now see not only how the marginal revenue and marginal cost curves for A are obtained with a given price of B but also how the change in net receipts from B is obtained. The price which the producer would wish to charge for A given the price of B can therefore be determined. In the same way, the price which the producer would wish to charge for B given the price of A can also be determined. We can thus obtain separate price lines for A and B and therefore discover in the same way as in the previous sections, what prices would be charged for both A and B. With the modifications that have already been indicated, the analysis, when both costs and demands are inter-related, of the effect of a tax on the production of one of the products or of a change in the demand for one of the products on the prices of both of the products would be in exactly the same form as that used when dealing with interrelated demands. It is therefore unnecessary to carry out this subsequent analysis.

¹ It should be noted that this is not the same as complementary or rival production as defined in the section on interrelated costs. First, it is not concerned with marginal costs. Second, it is not concerned with the total additional costs of B, in the sense of the amount by which total costs would fall if the production of B was abandoned, but with all costs incurred other than those included in the marginal cost curve of A.

An Accountant's Comments on the Subjective Theory of Value and Accounting Cost¹

By F. SEWELL BRAY

It might very well be said that at this time of day *efficiency* has become a much overworked word. Nevertheless, it does connote an ability to do something well and it would not be easy to suggest a better term. Within the framework of a controlled society we are forced to recognise the necessity of a balanced economy, an expression which implies efficiency in the *use* of the resources of production.

The industrial structure of the nation is constituted by a summation of the vast number and variety of individual enterprises engaged in producing the goods and services which society needs. For the total to be in a state of balanced economy it is essential that each individual business unit shall be similarly placed, a situation which is largely discernible from those documents of account which seek to measure in money terms the inputs of the factors of production in relation to the outputs of goods and services. Nevertheless, we should do well to remind ourselves that it is the major business of the accountant to record and state transactions of this order in such amounts of money as secular prices dictate. We may add that it is the major business of the economist to use and interpret accounting statements in the light of the underlying realities which they foreshadow. To say so much is not to overlook the pressing necessity for both economist-accountants and accountant-economists.

In the management of an enterprise it is a matter of some importance to determine the point of recovery of standing charges. If the profit margins between revenues and variable expenses at prescribed levels of output are inadequate to cover the costs of the facilities of production, then there is bound to be an operating loss. For this reason a well designed profit and loss account will always attempt to classify those forms of expenditure which are variable and those which are standing.

The operational profit of an enterprise is some indication of its short-period equilibrium in the sense of a careful arrangement of the inputs of costs related to such remunerative outputs as will recover those costs and leave profit at a reasonable level.

Quantitative measures of outputs in physical terms are tests of capacity, but they are not necessarily valid tests of efficiency until they are *related* to units of inputs and supported by some measure of the ratio of outputs to inputs in terms of the changing prices of each.

¹ "The Subjective Theory of Value and Accounting Cost" by G. F. Thirlby, *Economica*, February, 1946.

Inputs are very largely determined by the technical knowledge of the entrepreneur and the capital resources available to him as related to his judgment of the *money* costs and the *money* values of the expected result in outputs. It is this essential relationship between the money costs of inputs and the money revenues of outputs which the accounting art seeks to establish, albeit imperfectly, and this is why in the technique of accounts there is always a matching of money costs with money revenues over relatively short periods of time, a process which involves all those problems of cost allocation to which Mr. Thirlby seems to imply objection.

Mr. Thirlby has himself remarked on the ubiquity of accounting and the need for its reconciliation with economics, but reconciliation implies the common willingness of the exponents in both fields to understand each others conceptions, intentions and procedures. The accountant has built up and developed his art within the turmoil of the world of business, and it is only quite recently that he has come consciously to recognise that world as the domain of applied economics, while the economist has sought to raise his structure in the disinterested pursuit of truth for its own sake, and as a consequence he has been tempted to think in the pure terms of a society where everyone is honest, and where everyone is wise.

It seems that a misunderstanding between some economists and some accountants is immediately provoked when one or the other uses the word 'cost'. At bottom, the accountant regards a 'cost' as *the amount of money* paid or payable at a particular moment of time in exchange for some particular goods or services, and it is only in this sense that he comes to view an 'historical cost' as a piece of objective data. Mr. Thirlby following Wicksteed thinks of 'cost' in terms of subjective valuation, that is as a matter of human behaviour. Thus Wicksteed is quoted to affirm that the subjectivist sees 'the whole direction of resources to ends as a continuous selection between alternatives, guided throughout by a weighing of the significance of the anticipated results, in which the "cost" of adopting any alternative is simply the relinquishing of some other alternative; reward and sacrifice alike being measured and determined by the ultimate significance of the respective products, as anticipated by the producers.'¹ With this penetrating view by itself the accountant can have no quarrel, but he is concerned to point out that there is nothing with which he can deal until such subjectivist behaviour is translated in terms of amounts of money.

In the ordinary practice of business, a person faced with the opportunity of taking one or other of two courses of action will normally come to a decision by weighing up the situation in terms of amounts of money. The business man thinks of so much money flowing out of his enterprise and so much money flowing in, and ordinarily he is concerned to maximise the *money* margin between those cost inputs

¹ *The Common Sense of Political Economy*, ed. Robbins, Vol. II, 1934, p. 820.

which give rise to revenue outputs. This necessarily leads him to forward looking views involving advance calculations, but the point which it seems essential to emphasise is that such *ex-ante* decisions as in fact he does take are ultimately based on assessments of *money* advantages, and it is for this reason that accounting technique has become an essential tool of business enterprise.

Indeed, it would seem that Mr. Thirlby himself is not unmindful of the objective monetary considerations attaching to subjective judgments of human behaviour in advance when he says that 'there must be *ex ante* co-ordination of (1) the significance of the alternative opportunity of using (or not acquiring) the increment of money with (2) the significance of the eventual returns from the investment of the increment in stock; and this co-ordination incidentally involves other acts of co-ordination, namely (3) the co-ordination of the prospects of buying goods with the prospects of selling them, and (4) the co-ordination of the relative significance of the prospective returns from investment in alternative kinds of goods.'¹ No accountant would deny that the judgment of people's behaviour in advance is of the essence of business administration for it constitutes the first cause of his own budgetary accounting formulations, yet he may wonder at the assertion that 'no "right" way can be objectively determined.'² In business practice much judgment of future behaviour is informed by the *results* of behaviour in the past, results which have been recorded in the objective sense of historical costs and historical revenues. The very expressions 'historical costs' and 'historical revenues' denote actual business happenings which have involved transfers of money, and as such they firmly reside within the foundation of accounting terminology. Every subjective business judgment contemplates an objective result which is capable of projection in terms of so much money, and as soon as this piece of conversion has been accomplished administrative decision ordinarily rests upon a comparison of *money* margins.

Mr. Thirlby seems to have built up an argument within the framework of *ex ante* co-ordination to shew that a subordinate administrator of a business enterprise would offer 'a certain revenue in return for being granted a certain allotment of money.'³ Such a course is seldom followed. What usually happens in the circumstances conjectured by Mr. Thirlby is that the head of a department is required to prepare a budget of his prospective cost inputs in relation to his contemplated revenue outputs over a stated time interval,⁴ a portrayal of future results which is tested against past performances and modified by judgments of future conditions. When sanctioned, it is the function of this budget to mark the limits of authorised expenditure and to

¹ *Op. cit.*, p. 35.

² *Op. cit.*, p. 38.

³ *Op. cit.*, p. 45.

⁴ It is this time interval which provokes many of the accounting problems of cost allocation to which Mr. Thirlby seems to take exception.

set the short period input and output standards of the department. The actual allotment of money is rarely a question for the departmental executive because it is only the means of financing his intended expenditure and as such is a matter for the working capital budget of the financial officers of the enterprise. Changing conditions and mistaken estimates may subject the operational budget to revision, but so too they will explain historically recorded divergencies as unpremeditated causes of variance. For the rest the budget set the operational plan which it was the plain duty of the administrator to fulfill.

Mr. Thirlby has sought to question an accounting technique which links divisions of revenue to divisions of cost,¹ and in doing so he has given his analysis of business practice a strange air of unreality, or so it seems to the accountant, by unduly minimising the entrepreneurial *intention* of cost recovery. In an economy free from price level changes every entrepreneur would start out with the intention, at the very least, of recovering his actual money costs to be incurred over a projected time interval of more or less degree. In point of fact he would want a better inducement than this before he would contemplate venturing his resources at all. If the enterprise was a continuing one, in the circumstances of a dynamic economy he might have to look beyond the recovery of actual money costs to a recovery of replacement costs, but unless and until the means of exchange become impossible he will always think in terms of the recovery of so much money, and it is this which gives to the accounting art its great significance as a tool of business enterprise.

Mr. Thirlby has illustrated his argument by examples drawn from the relatively restricted field of certain merchanting operations, and in doing so he has tended to think of the accounting practices of attachment and expiry as something different from the primary meanings which accountants are disposed to give them. Accrual and expiry are thought of by accountants as reasonable methods of setting operational accounts within a selected time interval² on a receivable expendable basis. Mr. Thirlby says little about the long term costs of the facilities of production and yet no revenue could be earned without these facilities, so that clearly there must be some process of attachment somewhere as soon as it is recognised that all cost inputs are fundamentally related to revenue outputs. And what is an accountant to make of the suggestion that in his accounts he should 'accommodate his methods of "attaching" and "expiring" to the *discretion* allowed by the firm's administrative arrangements, and not proceed with his own independent methods of "attaching" and "expiring"?'³ To one accountant at least, it seems that if account-

¹ It is this linking of costs to revenues which leads Mr. Thirlby to object to the accounting processes of 'attachment' and 'expiry'.

² Designated by accountants as The Accounting Period.

³ *Op. cit.*, p. 45.

ing methods of attachment and expiry are to be based on a variable discretion then it must tend to vitiate accounting time interval comparisons the validity of which depend upon standard practices independently and consistently maintained. Again, it is commonly the case that accounting *methods* of attachment and expiry represent a reasonable and practical attempt to come to terms with technical variables, particularly in the assessment of departmental and unit costs. There is nothing to be gained here from administrative discretionary policies.

In the limited example which Mr. Thirlby cites, A apparently would be expected to attempt the sale of fifty homogeneous raincoats. Thus, if in fact this was one piece of business which was *indivisible by intention* then no accountant would do otherwise than read the venture as a whole when he came to match the costs with the revenues. It would only mean that fifty raincoats was the proper costing unit. The accountant would shew that the margin covered the standing costs of the merchanting facilities and approached the contemplated profit. In the circumstances of this particular case he might be required to mark the point where marginal costs were rising above marginal revenues, and clearly he would set it at the sale of the forty-ninth coat.

Mr. Thirlby is much troubled by what he calls the trick of "attaching", but business expenditure *is* incurred with the subjective intention of recovery and it is for this reason that it is always kept in view. The plain truth is, as every accountant well knows, that business managements *do* think in terms of cost recovery. Moreover there is a class of expenditure which is entered into with the intention of recovery over long periods so that, if nothing else, there must be some method of time allocation. Mr. Thirlby argues that A has the goods, not the money attached to them. Yes, but assuming price level stability, A knows that in selling those goods he is commissioned to recover not only the money spent on them, but the standing costs of the merchanting facilities. Without entering into questions of replacement cost recovery and residuary profit margins, this is the very least he *must* try to do.

It makes no difference to this view of costs that 'selling prices are tentatively planned *ex ante*', or that 'as time passes and the relatively obscure future approaches nearer to the present, the administrator will revise his appreciation of the selling market conditions, and consequently revise the selling prices that he had in mind when he bought the goods', for he will always keep before him the money costs incurred and which somehow or other he must attempt to recover. It is the accounting art which tells him what these money costs are and which sets the margin of safety.

Book Reviews

L'Ordre Social. By JACQUES RUEFF. Tomes I and II. Librairie du Recueil Sirey. Paris. 1945. 747 pp.

M. Rueff designed this work to be a *Dynamique Monétaire*, the sequel to his *Théorie des Phénomènes Monétaires*, which appeared in 1927, and was described as *Statique*. But "in the course of its growth the tree bore unexpected fruits". A theme which had been intended to be purely economic became merged in wider problems of the government of human society.

Nevertheless the greater part of the book carries out the author's original purpose. M. Rueff bases his monetary theory on the conception of the *encaisses désirées* of the public, which was formulated by Walras and has been brought to the notice of present day economists by Professor Marget. This gives him an elegant version of the quantity theory. "The quantity of money in circulation and the aggregate of *encaisses désirées* are the components of the force which generates monetary evolution." (p. 514.)

It is only a difference between the aggregates of *encaisses désirées* and of *encaisses effectives* that can change the price level. The popular notion of inflation, which takes account only of the variations in the quantity of money, without relating them to the *encaisses désirées*, is fallacious (p. 222).

Here M. Rueff finds an effective instrument of economic analysis, which he handles with great literary and dialectical skill. He starts with fundamentals. Exchange in the economic sense is exchange of *rights*. He conceives of the estate or fortune, the *patrimoine*, of an individual as accountable to the owner, like the assets of a firm or company. Against the rights composing it are to be set the *créances* due to third parties, and the residue is the net obligation of the estate to the owner—his net worth. So long as the residue is a positive quantity, the *créances* of third parties are true rights. If it is a negative quantity, they become in part false rights.

This extension of the accounting principles of a trading concern to the possessions of an individual is ingenious, but it does not afford a very firm footing. M. Rueff assumes too easily that everything saleable has a market value. And since human capital, apart from slavery, is not marketable he excludes from the balance sheet the individual's future earning power, which is surely the primary resource from which his obligations are met.

But false rights against individuals are not M. Rueff's principal theme. The legal enforcement of creditors' rights reveals them, and bankruptcy extinguishes them (p. 178). It is false rights *against the State* that raise fundamental questions of social order.

False rights against the State arise when the budget is in deficit, not a mere *déficit de caisse* when revenue lags temporarily behind expenditure, but a *déficit de patrimoine*. The tax revenue represents what the people can be induced to pay for the services rendered by the State; it measures the value of those services. If what the State spends exceeds that value, it is drawing on its *patrimoine*. The gap is filled by sales of *créances*.

M. Rueff lays stress on the immunity of State property from seizure, which prevents the purchasers of these *créances* from enforcing their rights against the State. This immunity exists in France (p. 151), but not necessarily in all countries, and its existence is not really essential to M. Rueff's case. His main point is that, if the State issues more *créances* than people are willing to hold, the Bank of Issue is called upon to buy them at a prescribed rate of interest (p. 273). So long as money is convertible into gold, the recipients of the *créances* can obtain real wealth in exchange at the expense of the Bank of Issue, and to save the Bank from insolvency the State decrees inconvertibility (p. 274). It is thereby enabled to exchange false *créances* without limit for the real wealth it needs, at whatever nominal value it chooses to attribute to them.

The State may transform false *créances* into true by imposing taxes (p. 166) or by raising loans (pp. 168-70). The distinction between *emprunt* and *créance* is not very clear. The definition of a *créance* (pp. 82-3) is of the widest possible generality. The underlying idea seems to be that a loan, *emprunt*, is the kind of *créance* which is not discounted by the Bank of Issue.

If the necessary resources are not provided by tax or loan, the *créances* in excess of what people are willing to hold are turned into money through the discounting facilities afforded by the Bank of Issue. The money becomes *encaisses indésirées*, the spending of which drives up prices.

It is in the efforts of the State to stave off or conceal the consequences that M. Rueff finds far-reaching effects of a deficit on the social order. He distinguishes two fundamental types of State action: liberal and authoritarian. By the former the State takes by taxation whatever share of the country's resources it needs and procures goods and services by purchase in free markets. By the latter it leaves resources in private hands, but coerces the owners in the uses they make of them.

Any actual State must employ both methods. The regulation of conduct must be authoritarian, however liberal economic institutions may be.

M. Rueff's attack is directed against an illegitimate extension of the authoritarian method. A Government which shrinks from raising a sufficient tax revenue to meet its expenditure, and fills the gap by means of false *créances*, tries to conceal the consequences by imposing maximum prices. Or social measures, such as a limitation of working hours, a weekly rest, paid holidays, national insurance, impose a

burden on economic activity none the less real for not appearing in the budget.

The authoritarian method he identifies with Socialism (pp. 654-60). And "the Government in a communist organisation will necessarily be an authoritarian Government."

This identification of regimentation with Socialism is common enough, but is it not rather superficial? Regimentation is resorted to to impose Socialistic ends upon an individualist community. And as M. Rueff himself points out (p. 664), if the State takes over the ownership of the instruments of production, the Socialist order becomes after all a liberal order. The nationalisation is an extension of the power of taxation, and the State as owner exercises the rights of any owner to do as he will with his own.

M. Rueff regards his book as a Monetary Dynamics, fulfilling the promise of a sequel to the Static theory of 1927. But a dynamic treatment ought to comprise not merely movements and tendencies, but relative *rates of change*.

The static treatment itself suffices to show that, whenever an equilibrium position does not exist, movements and tendencies occur, and must persist till equilibrium is reached. M. Rueff is too apt to be content to show that a movement or tendency arises, and to sum up the conditions governing its rate of change as *résistances et frottements*. For example if, with a gold standard, the *encaisses désirées* increase and exceed the supply of money, there is a rise of the value of gold in terms of other forms of wealth. An increased output of gold will result, and will restore the price level (pp. 259-60). "But in a real economy, there are resistances and frictions; the displacements of factors of production only intervene after delays which are not negligible." He distinguishes these adjustments from the secular movements in the cost of production of gold, due to discoveries and technological progress (pp. 493-4), and maintains that the reaction of gold output to any change in the price level is bound to re-establish the previous price level (p. 501).

But how soon? Undoubtedly the fall in the wealth value of gold in 1914-20 caused a decline in the output of gold, and the rise in its wealth value in 1929-35 caused an increase in output. But the decline in output could not prevent a '*boom*' *sans précédent* (p. 537) and the increase in output failed to re-establish the price level in terms of gold.

Moreover, under modern technological conditions the output of gold has become responsive to price and cost in a manner and to an extent previously unknown. It may be argued that the gold discoveries in Australia and California or in South Africa were the natural correctives of the rise in the wealth value of gold in the years 1815-49 and the years 1873-96, but these were secular movements, not cyclical. Changes in the output of gold were never an important corrective of cyclical movements of prices.

A dynamic theory would demand a detailed analysis of the resistances and frictions. In particular a much more penetrating analysis of the relations between the *encaisses désirées* and the demand for *créances* would be needed. *Créances* cannot be treated simply as one among the various forms of wealth, the demand for which can be adequately indicated by a curve in a diagram. A *créance* as defined (p. 83) would include the rights of a lessor of property or of a forward purchaser of goods. But the false *créances* with which M. Rueff is concerned, in particular those issued by the State, are rights to money. A right to money is a false *créance* if the debtor, when it becomes due and is claimed, does not possess enough money to discharge it. If he has not the money but has other valuable possessions, the creditor can enforce a sale. The obligation is discharged by the stipulated sum of money, whatever variations may have occurred in the wealth value of the money unit.

When the State issues *créances* to meet a deficit, these are rights to money. How can they be called false rights, if the money is received by the creditors when due? The *créance* does not entitle the creditor to any stipulated amount of other forms of wealth. *Créances* that are destined to be met by the creation of currency, at the cost of degrading the currency unit, may well be called "false", but they are not false according to M. Rueff's own definition. Money, whether metallic or inconvertible, is instituted by the State through legislative enactment. If through a disparity between *encaisses désirées* and *encaisses effectives* there is an undesirable disturbance of the wealth value of money, the ultimate responsibility for remedies or safeguards rests on the State. The debauch of money by inflationary finance is only a particularly flagrant abuse of this responsibility.

But, if his formula is open to criticism, M. Rueff's searching exposure of the futility of concealing the swindle by measures of regimentation remains a masterly piece of analysis, expressed in vivid and forcible literary form. He dissociates himself uncompromisingly from the present-day reaction against the classical concepts of economics. Undaunted he revives the postulates of the nineteenth century. In particular he takes for granted the existence of effective markets, giving substance at all times to value in exchange, actual or potential. That a market is itself a very costly product, painfully evolved, and usually very imperfect, is all concealed under *résistances et frottements*.

R. G. HAWTREY.

Guaranteed Annual Wages. By J. CHERNICK and G. C. HELLICKSON.
University of Minnesota Press, Minneapolis. 1945. vii +
146 pp. \$2.50.

This little book is avowedly a popular exposition of the case for guaranteed annual wages as a method of stabilising the earnings of workers in seasonal trades and perhaps of reducing the amount of

seasonal unemployment. The University of Minnesota Press commissioned Mr. Chernick, an economist who had already published a study of one guaranteed annual wage plan, to undertake the analysis, and Mr. Hellickson, a newspaperman, to look after the "social and 'human' aspects and readability". While the economist might have preferred a little more of Mr. Chernick and a little less of Mr. Hellickson, this should not be allowed to obscure the real merits of the book.

The authors start by describing the schemes adopted in the past twenty years by three American firms—Procter & Gamble (soap manufacturing), Nunn-Bush (shoe manufacturing), and Hormel & Co. (meat packers). They then widen their perspective to discuss some of the problems which would arise in extending the system to cover the whole field of employment—the possibilities of trade union participation, the part which should be played by Government, etc.

Reduced to its simplest terms, the payment of a guaranteed wage could take the form of dividing the estimated normal annual earnings (guaranteed to the worker) by 52 to determine the amount to be paid weekly, irrespective of the hours actually worked. There have been various schemes of this character, with varying degrees of complication of administrative arrangements. The short-lived plan adopted by the Cleveland Ladies' Garment industry in 1921 was essentially a scheme for equalisation of pay over the year; the authors describe other, more successful, arrangements of the same kind. Though it may have some value, this form raises its own problems (e.g., of incentive, of the exclusion of those casual workers who are most in need of the help which stable earnings could give), and the balance of advantage may be small. The three schemes which are described in detail go much further; their adoption was accompanied by reorganisation of production designed to reduce the seasonal fluctuations in output. Thus, starting from the guaranteed wage, an endeavour was made to stabilise employment, and this resulted in a reduction in costs which enabled a higher annual wage to be guaranteed. The causes of the seasonal variation differed in each of the three cases studied, and not a little of the interest lies in observing the differing methods adopted to secure regularity. For Procter & Gamble, for example, the cause was seasonal buying by wholesalers and retailers; the method was the establishment of a vast new sales organisation, necessarily accompanied by reorganisation of manufacturing, which, it should be noted, has "thrown a difficult and ever changing task upon the manufacturing departments". In the other two cases also there had to be extensive reorganisation. All were successful, and initial increases in (annual) wages granted in the expectation of economies to come were maintained and exceeded. It is, however, significant that the changes were possible only because there was considerable flexibility in the use of labour, which would be out of the question where there are demarcation rules, where dilution is

difficult, or where various other recognised trade union practices prevail. Moreover, the guaranteed annual wage, though it may have provided the original stimulus, has become a somewhat minor incident of what are in fact major industrial reorganisations. It may be that the authors are optimistic in their view that most firms can follow without much difficulty the example of three which appear to be supremely well managed—and even those hedge their schemes with other “guarantees” to give the management freedom to introduce variations and adjustments.

The authors are, however, quite clear about the difficulties which would arise in applying the experience of individual firms to industry as a whole. In their discussion of the possible application of a scheme to the building industry, given as a hypothetical case, they are careful to point out that the success of one firm which has reduced seasonal fluctuations by an annual wage plan, plus low contract prices in slack seasons and a number of other devices, is partly explained by the fact that it is just one firm. A scheme for the whole industry would have to face such difficulties as how far an hourly wage which at present takes some account of seasonal variations could be maintained (trade union participation is important here), or how far some workers might have to be excluded, with the result that more stability for some would be purchased at the expense of much less stability for others. Extending the analysis to cover all employment, they recognise that individual firms cannot undertake that responsibility for the maintenance of incomes which is necessary to ensure a high level of employment. Their claim for the guaranteed wage is a modest one; they look to Government action to maintain a high general level of employment, the guaranteed wage system then being primarily a means of providing security for workers in seasonal industries. Although it might be an aid to securing a better use of resources, it might also introduce new rigidities into industry. The authors conclude that the case for more general adoption of such schemes is strong, but, conscious of the great diversity of conditions, they stress the need for experiment, with freedom for the individual firm to work out the scheme most suited to its needs (they oppose any suggestion that Government should step in with compulsory standardised arrangements).

In his *Full Employment in a Free Society*, Lord Beveridge dismisses the problem of seasonal unemployment by stating that “with proper organisation and under conditions of full employment there should be no difficulty in reducing seasonal unemployment to one-half its former figure”. Messrs. Chernick and Hellickson give us a vivid picture of the complexities of “proper organisation” and indicate some of the problems which need to be considered under the head of “no difficulty”.

The case is vigorously presented, with a happy blend of description and analysis—though the latter is at times perhaps over-simplified,

and sometimes altogether hidden (the book is intended to persuade the businessman and not the economist), it is only on one or two minor details that one feels that Mr. Hellickson's enthusiasm has got the better of Mr. Chernick's judgment. If at times the "readability" is reminiscent of the style of *Time*, and the economist may not be impressed by statements by bishops that annual wage plans are "economically feasible" (as well as being a "democratic imperative"), it is possible to be consoled by such touches as the description of the austere and autocratic founder of Procter & Gamble sitting in his office, which "might almost be the study of an Anglican bishop" (furnished in Tudor oak), insisting that the main point of his scheme was that it paid.

S. R. DENNISON.

A Cartel Policy for the United Nations. Editor: CORWIN D. EDWARDS (Columbia). Columbia University Press. Oxford University Press. 1945. vi + 124 pp. \$1.25. 8s. 6d.

This stimulating and valuable little book contains five papers, presented at Columbia University in March and April, 1945, on various aspects of American policy towards international cartels. It seeks to summarise the bearing of international cartels upon economic prosperity and political security, to appraise the efforts that have been made by various countries to cope with the cartel problem and to indicate the present possibilities of curbing cartels. Professor Fritz Machlup examines "The Nature of the International Cartel Problem", Professor Ben Lewis discusses "The Status of Cartels in Post-War Europe," Dr. R. P. Terrill examines "Cartel Policy and International Security", Professor T. J. Kreps considers "Experience with Unilateral Action towards International Cartels" and Professor C. D. Edwards winds up the series with a study of "The Possibilities of an International Policy towards Cartels." All of the papers are both interesting and substantial and the reader is left in no doubt that this group of economists heartily dislike cartels as inducing organised scarcity, unemployment, private trade barriers and an economic climate appropriate to political disturbances. The authors are in broad agreement that it is in the power of the U.S., even acting unilaterally, to do much towards curbing cartels but that international action would, of course, be better; that, despite the difficulties soberly outlined in Professor Edwards' paper, international action is possible but that it will depend largely on what America does rather than on what America says.

"Behind inordinately high tariff barriers, behind a patent system made to order for restrictive and monopolistic abuses, and behind charters of incorporation granted by states which, like Delaware, compete in laxity, American cartel operators have had as powerful

a voice in international cartel affairs as those of any other country.” (Professor Kreps).

“A society which has introduced and maintained protective tariffs has little right to complain about the wickedness of cartelists.” (Professor Machlup.)

What is wanted, says Professor Lewis, is a

“demonstrated determination on the part of the Government of the U.S. to do its utmost to break down and keep down governmental barriers to world trade . . . and a demonstration of determination to proceed unilaterally if necessary against private cartelisation.”

Professor Lewis is right. The U.S. is the one important country in the world economically strong enough to give a lead in risk-taking in the interests of an expanding world economy but what the world wants is evidence that informed American opinion can secure the acceptance of policies that, if effective, are going to hurt influential sections of the American public.

The authors of these papers are for uncompromising war on cartels, they are opposed to the view that cartels cannot be eliminated and that, in consequence, they should be recognised and controlled. Dr. Terrill warns us in particular against the thesis that once Nazi influence has been eliminated international cartels will become acceptable institutions. Professor Kreps refers to the insignificant results that followed the policy of cartel registration introduced by some European countries before the war. In fact, it may even have had the opposite result of conferring some degree of immunity against later criticism. The dangers inherent in a policy of permitting cartels to operate under Government supervision are most vividly brought out in Professor Machlup's paper.

“Government supervised cartels”, he says, “are a greater threat to a democratic, competitive society than uncontrolled cartels. An uncontrolled cartel is perpetually exposed to the economic thrusts of seceders, outsiders, and newcomers, and to the political thrusts of a suspicious public and critical Government. Government control, on the other hand, is apt to make the cartel more bureaucratic in its operations and more autocratic in its relations with minority groups and customers. Government control sanctifies the cartel. Conspiracy becomes ‘regulation’, unlawful restraint becomes Government approved ‘order’, restriction becomes ‘planning’.”

Elsewhere he says:—

“It is naive to believe that cartels supervised, controlled or even fully administered by Government officials would be run in a very different way from private cartels without public regulation. Business men can easily persuade Government officials of the

appropriateness and reasonableness of their price policies. More important, any price determination which is based on 'cost plus' reasoning results regularly in a price higher than would follow from vigorous competition. Even the most public-spirited bureaucrat would set prices at levels in excess of what genuine competition would allow."

Professor Machlup is probably right in his view that

"over-expanded industries would often be glad to turn the whole business of price determination over to the Government; for, under such circumstances, any so-called 'reasonable price', any price which includes 'a fair return to investment', would be in excess of prices attainable under competition".

The supply of civil servants with the background and training necessary for supervising cartels is, of course, quite inadequate. There is, however, a more formidable difficulty. Even if it were possible to lay down fairly precise rules on pricing, the actual settlement of prices to conform with those rules would be largely a matter of opinion and judgment. There would be risk of corruption, but a danger more difficult to guard against is that officials would be influenced, often without realising it, by their prejudices and by their attitude towards particular firms and personalities. It is asking a lot of any official that he should behave with the same impartiality and detachment as the forces in a competitive market.

Admittedly there are cartel makers whose objects are clearly to make or increase their own fortunes and power and who will stop at nothing. Cases so glaring might be easy to deal with. There are others—and they are probably the majority—where motives are mixed. It is not as though restrictive practices as a whole are regarded by the run of people as immoral. The public—even the informed public—would often distinguish between excesses to be condemned and reasonable measures taken for all the reasons that economists delight to put in quotation marks. Many a decent and public-spirited managing director of a large company faced with the choice of losing the bulk of his shareholders' capital—possibly through circumstances that nobody could have foreseen—or of entering a cartel would feel it his duty to choose the latter. Even if he thoroughly understood the loss it imposed on the community at large his decision might be the same on the grounds that he had no right freely to choose ruin for his shareholders as against less production and higher prices for his customers. Professor Machlup says that

"almost all organisers and members of cartels are convinced that their activities are beneficial for the whole economy".

This may be too sweeping a generalisation but any cartel policy must face the fact that people will in some measure identify their own interest with that of the public's, will rate loyalty to the smaller

groups they know—such as their shareholders—higher than loyalty to the community at large.

It is unreasonable—or at least unrealistic—to expect people to allow the full sanction of financial loss for mis-investment, inefficiency, or lack of drive, to operate against themselves or those for whom they have responsibility or affection, if it is in their power to avoid it. The sanction of financial loss, if it is to be allowed its full influence, must therefore operate automatically and impersonally; there must be as little discretion as possible left to business men or officials. What then, should be done? The Americans have tried the direct policy of legal sanctions against restrictive practices and, as Professor Lewis says, this has not been without effect. Up to 1932, we in Britain tried the indirect policy of maintaining an economic climate of free trade unhealthy to restrictive practices and this too was not without effect. What is now needed, as a lead to the world, is a combination of both these policies in both countries.

RONALD S. EDWARDS.

Studies in the Classical Theories of Money. By KARL H. NIEBYL. Columbia University Press. Oxford University Press. 1946. xii + 190 pp. 16s. 6d.

The central thesis of this book is that economic thinking tends always to be coloured by economic environment; and, moreover, not so much by the environment which is strictly contemporary to the writer as by that which has receded far enough from him for its main structure to be clearly perceivable. Economic terminology, however, persists unaltered throughout these structural variations. Consequently, the correct interpretation of the economic views of earlier epochs makes it necessary first to discover the exact shade of meaning which, at each relevant time, was appropriate to such concepts as "capital", "credit" and "inflation". If this is done, many of the apparent inconsistencies, e.g., between the earlier and the later mercantilists, are seen to be no more than the reflection of a changing environment enshrined in a phraseology of imperfect precision and misleading rigidity.

Interwoven with this methodological theme is a second, that the change-over from a mercantile to a manufacturing and later to an industrial economy profoundly affected all financial institutions and all economic theories. For example, the emergence of country banking in England in the eighteenth century is attributed to a fundamentally different cause from that which prompted the earlier specialisation of goldsmiths in banking and which created the Bank of England. The latter represents the evolution of machinery to finance trade—the exchange of commodities; the country banks grew up to finance

production—the formation of industrial capacity, mainly in the form of working capital for the payment of wages to factory hands. Hence the rapid growth in London of deposit banking and cheque clearing, whilst country banks for long specialised in the issue of notes, and especially small notes.

This and similar contrasts are interestingly developed. Dr. Niebyl shews how Hume, Thornton, Ricardo, the Attwoods and their various contemporaries, viewing the Quantity Theory, the nature of inflation, the importance of bank deposits, and many other such subjects, were profoundly influenced by the structure of society in their day, and by their own personal circumstances, and came naturally to conclusions which often appear, and indeed sometimes are, conflicting. Similarly, a re-examination of the issues raised in the Currency Debates reveals the importance of the different attitude towards international trade taken by writers to whom it represented a source of needed supplies (whether raw materials or luxury goods) and those to whom it predominantly implied an outlet for capital goods and an opening-up of foreign markets for finished consumer goods.

Unfortunately, to disentangle these ideas from Dr. Niebyl's exposition is not easy. His book tends to get bogged down in elaborations of his thesis so obscure that it is exceedingly difficult to understand either what he is trying to shew, or what are the arguments he is trying to use. The reader's patience is also tried by an undue quantity of errors or misprints, and by a tendency to quote in footnotes references which, on being turned up, are found not to bear out the interpretation placed on them in the text. Moreover, Dr. Niebyl is apt to tilt at windmills of his own building, and sometimes to overstrain the facts to fit his thesis. It is scarcely correct, for example, to claim that bills of exchange did not become "an integral part of the economic process" until the eighteenth century (p. 28); or that the establishment of country banking in England dates from after 1752 (pp. 20, 46); or that during the operation of the "Palmer Rule" the internal price-level tended to stability, in contrast to those of import and export prices.

Such defects of presentation may well be explained by the fact that, at the time of sending the book to press, the writer was "with the U.S. Naval forces in the Pacific"; but they do make it a matter of real difficulty for the reader either to appreciate its merits or to evaluate its contribution to an understanding of the period covered. This is a pity, because its underlying ideas are, as has been indicated, interesting and thought-provoking, and even as it is the specialist will find the book stimulating to dig into. It is to be hoped that Dr. Niebyl will return to the subject and recast his arguments in a form which will make clear to the ordinary reader those details of his theme which at present remain cloudy, baffling or at best unsatisfying.

J. K. HORSEFIELD.

Studies in Income and Wealth, Volume 8. Conference on Research in Income and Wealth, National Bureau of Economic Research. New York. 1946. xiv + 297 pp. \$3.00.

The latest volume in the series, the result of the 1944 annual meeting of the Conference, contains eleven reports on international comparisons and the distribution of income. The first five reports deal with rather general subjects. Professor Haberler and Mr. Hagen open the volume by a further discussion of the concept of the national income which, though it raises some long-buried arguments, adds nothing new to the discussions with which readers of this journal must be familiar.

Perhaps one should take this opportunity to defend the British White Papers' definition from the charges levelled against it in this report. Whether one measures national income on the accepted English definition or on the German definition, as advocated by the authors, should make no difference to the total net national income at factor cost; it would involve only a reclassification of government expenditure between expenditure on goods and services on the one hand and subsidies on the other. The British definition also stands the test of 'invariance', as has been amply demonstrated; the authors misunderstand the meaning of the terms direct and indirect taxes when they assume that direct taxes might be shifted to the consumer or indirect taxes paid by the producer. The British classification of taxes is based on the generally accepted belief that, for instance, income tax is not shifted. There is a repetition of these charges in the fourth report by Messrs. Liu and Fong which also deals with conceptual problems.¹

The report by Mr. Fabricant on the measurement of national consumption is systematic and concise. He is able to point out the larger qualifications which should follow the usual estimates. The report of Mr. Smithies on the use of national income estimates to determine contributions to U.N.R.R.A., relative contributions to the war, and reparations, contains suggestions which are fantastic. (Incidentally, the assumption that marginal utility of income diminishes as income increases is not a sufficient condition in the argument for progressive taxation. Cf. Pigou.) Mr. Bean uses Colin Clark's figures to show that industrialisation increases income per head.

The following three reports, based on more realistic studies, are very valuable. The report of Miss Deane (the only British representative) on the problem of income measurement in the colonies makes us look forward to her forthcoming book which will deal with the subject more fully. Mr. Doblin, though giving few figures, discusses the German national income during the war. The pre-war German discussions on the concept, bordering on metaphysics, are well known and are excellently summarised here. It is shown how difficult it

¹ One would assure the authors that the British White Papers' definition automatically includes most undistributed profits on foreign investments (and not dividends only), and their point, on p. 78, arose from an obvious slip in the Meade-Stone article.

is to maintain the welfare concept while preparing for aggression or waging aggressive wars. During the war, as Germany utilised the war potential of other countries, her national income measurements became very confused. The German national income measurements during the war were far less efficient than the British White Papers, in spite of the attempt at imitation. A study of the German income during the war still remains to be undertaken and, though material exists, it will not be an easy task.

Mr. Studenski deals with the methods of estimation in Soviet Russia. He is not only able to give an excellent summary of the subject but also presents very valuable figures which must be welcome in English-speaking countries. The Soviet method of measurement is handicapped by the legacy of the Marxian definition of the national income, in its turn taken from Adam Smith. Services connected with the distribution of goods are included in the national income but not direct services. There is obviously some logical inconsistency in the definition but Mr. Studenski is able to refer to valuable suggestions by eminent Soviet statisticians for improvement. If these suggestions are officially accepted, the Soviet definition will be very near to the present Anglo-American one. Of course, the question of pricing has to be carefully considered. Since the rise of Hitlerite Germany very few Russian statistics were available for publication. Although national income totals were given for some years, nothing is known about their composition or the exact definition, if changes have taken place in the definition. One only wishes that a Soviet statistician would adapt and explain Russian figures for Western consumption. The income per head, at stable prices and on the official definition, which was 150 1926-7 rubles in 1913 and only 80 in 1920, is given as 149 in 1926, 288 in 1932, 530 in 1936, and 675 in 1939. These figures should be treated with caution until their content is more exactly known. The share of agriculture in the total has fallen from one-half to one-quarter over the period.

The last three reports deal with estimates of the distribution of income in the United States. They are very valuable for the technical statistician, but the general reader in this country will hardly find them useful until the volume of British statistics greatly expands. The main problem in America is not how to prepare estimates from practically no material but how to reconcile the different sets of statistics, especially income-tax statistics, with those obtained by sample surveys.

T. BARNA.

Land and its Problems. Vol. I. By SUDHIR SEN. Visva-Bharati Economic Research. Calcutta. 1943. 155 pp. Rs. 5.

Some authors charm the reader by their subtlety and unexpectedness. Mr. Sudhir Sen's most admirable regional study of paddy cultivation

in the villages surrounding the Sriniketan Institute of Rural Reconstruction (founded by Tagore) in Birbhum, Bengal, carries complete conviction by its utmost simplicity and sound common sense.

Mr. Sen begins by stressing the need for detailed, regional studies; partly because of the inadequacy of existing statistical data in India, and partly because a comprehensive survey provides an opportunity for the collection of much valuable additional sociological material. He concludes, incidentally, that the greater part of the margin of error in existing agricultural statistics arises from the shortcomings of the individuals who supply the information, so that "to improve the latter and to create a more favourable psychological milieu would appear to be far more important than to introduce further refinements into the statistical methods used".

Many proposals have recently been made for revolutionary changes and experiments involving legislation affecting the rights of ownership, reform of the land revenue system, the organisation of collective farms and other far-reaching Governmental measures. Mr. Sen starts with the more limited but more immediately practicable object of discovering how and to what extent the agriculturalists' incomes can be raised by measures independent of legislation and social reorganisation. Not that he objects to fundamental reform. But he argues that a very great deal could be done to improve output, agricultural incomes and welfare whilst more far-reaching plans are being formulated. The result of his analysis is the encouraging conclusion that much could be done, without any change in the present economic and social organisation, to increase output per acre; that such an increase is of the first order of importance in India (where average yields are notoriously low); that the extension and proper maintenance of existing irrigation and drainage works could add over 25% to yields; that available manures could be used to add further to yield; that the adoption of better strains by simple selection of seed and by hybridisation could increase yields by another 20-25%; and that improvements in cultural methods and an extension of double-cropping could also contribute greatly to the same end. These "very ordinary" measures would result in vastly increased outturns per acre and income per head. These conclusions, with suitable modifications, also apply to other crops than paddy and to other districts than Birbhum.

The results of this laborious, house-to-house collection of data, apparently so humdrum and limited in scope, fully justify Mr. Sen's quotation from Tagore that the true worth of a work does not depend on the scale of its operation, but on the objects for which it stands: small things are not small if related to a higher purpose. All who are concerned with the welfare of the agricultural masses in India should study this unpretentious little volume.

VERA ANSTAY.

Commercial Policy in the Post-War World. Report of the Economic and Financial Committee of the League of Nations. 1945. 124 pp. \$1.25. 5s. od.

This most interesting and valuable report rounds off the excellent inter-war record of the League's Economic and Financial Committee, which worked with untiring zeal to promote international co-operation in the spheres of commercial relations and international trade. In view of the International Conference to be held this autumn, the report is of great topical importance.

The first two chapters briefly review the course of international economic action from 1920 onwards, when long-term reconstruction began to replace the transitional policies of the immediate post-war period. The Financial Committee dealt successfully with the financial problems of many Central and Eastern European countries, whilst the Economic Committee—although it was instituted too late to devise a general plan for reconstruction—made a number of valuable contributions designed to prepare the ground for intergovernmental action to promote freer and more equal trade.

In particular, the Economic Committee helped to promote the concerted removal of many restrictions and controls, and to improve the legal and administrative bases of trading operations by initiating the negotiation of numerous multilateral trade agreements. A list of these agreements is given in the text. The conclusion is drawn that the value of permanent international machinery to deal with the administrative and legal aspects of international relations was clearly demonstrated, but that the League's machinery and equipment was inadequate for handling central issues of international economic policy. Indeed, one of the chief lessons from experience is that in the absence of political security and co-operation no policy, however wisely conceived, can hope to solve these central economic problems. The Report also concludes that lack of a general plan for reconstruction, immediately after the war, involved both the continuance of war-time distortions and the development of fresh maladjustments, thus leading to over-capacity and unemployment in the older industrial countries, and to agricultural over-production in the predominantly agricultural countries. In addition, undue emphasis was laid, in formulating economic policies, on producer, as contrasted with consumer, interests.

Chapter III demonstrates the vital interdependence between the restoration of a free and expanding world trading system, on the one hand, and the achievement of higher standards of living, full employment, and equal access to raw materials, on the other hand. It is insisted, again and again, that the central object of freer trade policies is not simply to increase international exchange of goods, but is also to overcome unemployment, under-employment and poverty.

Chapters IV and V deal with the crucial questions of how to secure a reduction of trade barriers and the progressive elimination and

prevention of discrimination, and it is stressed that these two principles are essentially interdependent. Chapter V is of particular topical interest owing to the emphasis laid to-day by U.S.A. on non-discrimination as the essential prerequisite for multilateral and expanding trade.

Chapter VI discusses a number of hardly less important problems, such as customs unions and agreements, cartels, intergovernmental commodity regulation schemes and obstacles to the supply of raw materials, and suggests appropriate lines of solution.

Next we come, in Chapter VII, to the Committee's main recommendations. Eleven main objectives of policy are listed, and a general conference to deal jointly with commercial policy and the international aspects of employment policy is advocated. But once again it is stressed that a system of international economic co-operation can work only in a world freed from the threat of war. Finally, three Annexes contain (i) a long memorandum on most-favoured-nation treatment, reproduced from a League Document of 1933; (ii) a note on measures to prevent the growth of vested interests behind quantitative trade controls during the transitional post-war period; (iii) a list of important League Documents relating to trade and commercial policy.

In general the Report contains a most valuable explanation of the principles and arguments (supported throughout by reference to inter-war experience) which underlie U.S.A.'s proposals for an International Trade Organisation and Agreement. This should help to explain the American attitude to British readers, and help to counteract the unfortunately prevalent belief that this is based on narrow regard for national interests rather than on a real desire to promote world welfare.

VERA ANSTEY.

The Economic Development of the Middle East: an Outline of Planned Reconstruction after the War. By ALFRED BONNE. The International Library of Sociology and Social Reconstruction. Kegan Paul. 1945. 164 pp. 12s. 6d.

One of the major features of the economic history of the nineteenth and early twentieth centuries was the great tide of men, capital and technical knowledge that flowed out from the lands bordering the North Atlantic to stimulate production and increase prosperity in other parts of the world. But that tide spread itself by no means equally; before war came to reduce large areas to a common level of misery the world economic pattern was decidedly piebald; and prominent among its bald spots of poverty and retarded development were the Asiatic territories of the old Turkish Empire. Possibly the most valuable part of Dr. Bonne's study is his description and analysis of the backwardness of those territories, in none of which

was the average pre-war income per head of indigenous population more than £19. Dr. Bonné's diagnosis of the problem is simple and unassailable. The low standard of living he attributes, partly to the maldistribution of income, but primarily to the low productivity per head of working population. That low productivity, in turn, he attributes partly to the illiteracy and ill-health which the paucity of educational and medical services makes inevitable, but primarily to the low level of capital investment. His remedies follow logically from his diagnosis. On the one hand, he would achieve a more equitable distribution of the national incomes by taxation, by the reform of land tenure, and by the reduction of rents, middlemen's profits and interest rates. On the other, he would increase those incomes by the intensification of agriculture, the extension of the area under cultivation, industrialisation, and the development of public and social services. It would be easy to criticise the relative importance which Dr. Bonné tentatively attaches to each of those lines of action. In particular, he seems greatly to exaggerate the opportunities for useful industrialisation. But, if taken in the correct doses, the remedies which he prescribes are obviously proper to the malady with which he is concerned.

His argument, however, becomes less impressive when he confronts the basic difficulties of the Middle East situation, for it is inspired by an optimism which, though it may have seemed justified when an earlier version of this work appeared in 1943, seems somewhat out of place in view of recent developments both in the Middle East and elsewhere. Dr. Bonné realises clearly enough that reconstruction must be financed, and that capital shortages can be made good only by the investment of new capital. For that new capital he looks, partly to internal loans to be floated by the governments of the various Middle East territories, and partly to funds to be obtained from some American or international organisation for the development of backward countries. But state loans have never been popular in the Middle East. Even at the peak of war-time inflation, when the inequalities of income distribution were enhanced and swollen profits were frantically seeking employment, the governments could not be persuaded to borrow on any significant scale for post-war reconstruction. They will not find it easy to do so now that imports are once more becoming available for consumption, and their difficulties will be increased if the further accumulation of capital is to be checked by a substantial redistribution of their national incomes. Nor does there exist any external organisation likely to finance Middle East development with the same disregard of normal economic criteria as that with which the Zionists have financed the Jewish community in Palestine. Moreover, Dr. Bonné insists that the reconstruction of the Middle East must be planned. Effective planning, however, requires not only a government enthusiastically devoted to the promotion of social welfare but also an administrative system adequate

to the demands which planning must inevitably make upon it. The woeful story of Middle East efforts at rationing and price control during the war suggests that in few, if any, of the independent territories do those conditions obtain. The would-be planner of the Middle East is, in fact, faced by a dilemma. Judged by the standards of Western Europe, the countries with which he has to deal are backward not only economically but also politically. Their economic backwardness provides a major argument for the planning of their future; but their political backwardness makes the possibility of such planning remote. That is a dilemma which Dr. Bonn  never faces squarely and for that reason his plan seems, at least to this reviewer, rather less constructive than his publishers claim it to be.

F. J. FISHER.

SHORTER NOTICE

Economisch Motief en Economisch Principe. By P. HENNIPMAN.
N. V. Noord-Hollandsche Uitgevers Mij. Amsterdam. 1945.
xi + 479 pp. Fl. 15.

At bottom most discussions of method in Economics hinge on the question, how an empirical science can attain the logical rigour without which no coherent body of knowledge can exist. The logical form of science is indispensable as a consistency test for the various propositions it contains. It is, of course, for empirical research to formulate these propositions. In no way can material content be derived from logical form. The methodological function of the latter is merely to ensure that no proposition shall contradict another.

Professor Hennipman, of the University of Amsterdam, evidently misled by some writers' description of equilibrium theory as a "logic of choice", sets out to search for a general assumption about human conduct, a "general psychological premise", from which the whole of economic theory could be deduced by logical inference. It is not surprising that he fails. He examines "economic motive" and "economic principle" with regard to their suitability as "psychological premise", and rejects both. He sees that there is no such thing as an "economic motive", and that the "economic principle" is a formal principle which applies to all rational action. In the end he becomes convinced that Economics needs a large number of complex assumptions about human conduct to keep itself going. The argument is marred by confusion between logical form and empirical content, between statics (which may be described as a "logic of choice") and dynamics (which certainly may not).

The book contains a good deal of interesting material, and some acute observations, on the recent history of methodological controversy. It remains an astonishing fact that the author requires 460 pages to reach his mainly negative conclusions.

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